SS Mary & Patrick's Church, Avoca, Co Wicklow

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For: **Avoca Parish**
Date: **August 2023**
Job Ref: **18-32**
Issue Date: **Sep 2023**

Funded by
An Chomhairle Oidhreachta
The Heritage Council

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SS Mary & Patrick's Church, Avoca, Co Wicklow.

Condition Assessment & Overview of Proposed Interventions

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Front Elevation – FKP photo from July 2023

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Report Limitations

- The condition survey is based on visual inspections only. The condition survey is limited to accessible areas.
- It may be necessary to undertake limited opening up works to provide a better understanding of the building condition.
- No invasive works have been carried out or samples taken or tested.
- Inspections do not deal comprehensively with the condition of timber and the presence or extent of fungal or insect infestation. A timber specialist's advice should be sought in relation to these matters.
- The reports exclude all aspects to do with Fire Services Act, Building Regulations and Planning. Fire risk assessment is not considered to be included as part of the condition reports. These factors will be considered in detail during the next stage of the project.

1 Introduction

1.1 Background

Fitzgerald Kavanagh + Partners are engaged by Avoca Parish to provide Conservation Services for SS Mary & Patrick's Church, Avoca, to review issues with deterioration of plaster & dampness through the church and provide recommendations in relation to refurbishment works to address the issues. These services are provided in support of an application for funding under the Community Heritage Grant Scheme 2023, on behalf of the Heritage Council.

Fitzgerald Kavanagh + Partners first visited the church to review the condition in July 2018, with a further review in March 2020, and more recently visits carried out in July & August 2023. During the July 2023 visit, a 'height for hire' MEWP, was provided to facilitate high-level inspections to the exterior and interior. Each of these visits has contributed to a better understanding of the building condition.

A complete survey and condition assessment of the existing building fabric has been carried out, including a list of defects, which have informed the scope of proposed repairs and upgrades. A synopsis of the principal issues to be addressed are set out in this document, with proposed works being categorized as urgent, necessary, and recommended. This document combines the assessments and observations made in previous reports prepared by FKP.

In addition, from the survey findings, we have recommended some further investigations be carried out, which include obtaining surveys and localised opening up works in strategic locations to determine the building's condition and construction methods. These details are set out in the final chapter of this report.

1.2 Conservation Strategy

St Mary's and St. Patrick's Catholic Church was built c.1862. It is not listed on the Wicklow County Development Plan Record of Protected Structures, nor does it lie within an Architectural Conservation Area (ACA). It is listed as having a regional rating on the NIAH Survey. An extract from the entry on NIAH is listed below –

Reg No	*16403510*
Date	*1860 - 1865*
Coordinates	*320480, 180139*
Categories of Special Interest	*Architectural, Artistic, Social*
Rating	*Regional*
Original Use	*Church / Chapel*
In Use As	*Church / Chapel*

Description

Detached four-bay with transept and two-bay chancel single-storey Roman Catholic church, built 1862. The building is constructed in rock-faced squared rubble with ashlar dressings. Built in French Gothic style it is articulated with reducing buttresses and is cruciform in plan; the sacristy is octagonal in plan with a pyramidal roof. The three stage tower has a broach spire and reducing buttresses. The timber sheeted door has a segmental-arched head and is set within a gabled porch at the south end of the nave. Window openings are pointed-arched with a mixture of tracery designs and extensive pictorial stained glass. The pitched roof is slated with natural slate and cast-iron rainwater goods. The church is slightly set back from the road behind wrought-iron railings with matching gate and square gate pillars.

Appraisal

A well preserved example of a French Gothic style church, a genre much favoured by the Catholic Church in the later half of the 19th century. It adds rhythm and detail, along with a sense of authority, to the streetscape.

It is unusual that a building of this era and significance in the parish is not listed on the Record of Protected Structures, it poses greater opportunities to alter and reimagine the church but also requires that all aspects of the structure comply with Building Regulations. It is noted that Protected Structures are exempt from Part L 'Conservation of Fuel and Energy' and derogations can be sought from other parts of the Building Regulations due to the limitations of historic buildings due to technical, aesthetic, or regulatory reasons. In the context of SS Mary & Patrick's Church, the building is expected to comply with current regulations as standard, which could potentially be extremely onerous, due to the historic building fabric. The agreed scope of works determined at the next stage of the project will need to be reviewed in relation to building regulations, to determine if the works would be categorised as routine maintenance which would mitigate the need to comply with the requirements of the building regulations, or if the works would be categorised as material alteration, extension or major renovation (more than 25% of the building's envelope surface is renovated) which would stipulate the need to comply with the requirements of building regulations. This report excludes all aspects of compliance with building regulations and should be considered in detail during the next stage of the project.

As the building is of historical merit, it is important that a clear and concise Conservation Strategy is prepared and adopted at the beginning of the project. Having a Conservation Strategy does not entail making the project more complicated, expensive or prolong the programme for the works. It will set out a clear path for works and how these works meet the requirements for a best practice approach in the refurbishment of a historic building. It will be a requirement of the Local Authority in the event of either a Planning Application or a Section 5 Declaration.
The works proposed need to be in keeping with the existing building and the methodology for building conservation will take cognisance of the following published material:

- ICOMOS Conservation Charters (United Nations)
- The Department of Environment Heritage and Local Government's (DoEHLG) (now the Department of Arts Heritage and the Gaeltacht), 2011 publication "Architectural Heritage Protection Guidelines for Planning Authorities"
- BS EN 7913:2013 "Guide to the Conservation of Historic Buildings"
- BS EN 16096:2012 "Conservation of cultural property, Condition Survey & Report of Built Cultural Heritage"
- The Department of Arts Heritage and the Gaeltacht Advice Series Publications.

The Strategy should take cognisance of the ICOMOS Conservation Charters (United Nations) as per the following:

• **Venice Charter:** This charter recommends that conservation philosophy should include the practice of full research prior to commencement, recording of all work, minimal intervention, repair rather than replace, and all interventions to be clearly distinguishable.
In the context of SS Mary & Patrick's Church, we are presently researching the development of the property, and investigating the extent of original finishes and features and understanding modifications to original features and ensuring that where repairs are proposed that the details match the existing.

• **Burra Charter:** The Burra Charter seeks to ensure that the heritage object's real significance is fully retained recovered and revealed as part of the works.
In the context of SS Mary & Patrick's Church, we propose that works are carried out on a like for like basis respecting the existing fabric and ensuring that the restoration works retain the uniqueness of the church.

• **Granada Convention:** The Granada Convention encourages the use of protected properties for needs of contemporary life.
In the context of SS Mary & Patrick's Church, there is no change of use proposed as part of these works. The intended renewal and upgrade to the building fabric will be carefully considered to avoid disturbance to the original fabric and are considered necessary to safeguard the building fabric into the future.

• **The Nara Document on Authenticity:** This document seeks to ensure that the conservation work protects the authenticity of the structure.
In the context of SS Mary & Patrick's Church, the building remains largely unchanged in its form throughout its existence and is an important building in the parish of Avoca. The proposed works will respect the authenticity of these elements and other unique features.

1.3 Conservation Key Principles

The development of a Conservation based Planning Strategy for the works starts with a review of the Department of Environment Heritage and Local Government's (DoEHLG) 2004 publication "Architectural Heritage Planning Guidelines for Planning Authorities". The following is an analysis of the relevant chapters:

1. **Keeping a Building in Use**: Once the building is retained in use it will be maintained.
2. **Researching and Analysing**: A detailed and extensive study is required to analyse and research the historical background and context
3. **Using Expert Conservation Advice**: Fitzgerald Kavanagh + Partners is an RIAI Grade I Conservation Accredited Practice, with three Conservation Architects of various grades.
4. **Protecting the Special Interest:** The replacement of structure and fabric should be carried out where possible with materials and details on a "like for like" basis.
5. **Promoting Minimum Intervention**: The strategy should allow for the maximum retention of the surviving building fabric and structure.
6. **Respecting Earlier Alterations of Interest:** As the building has undergone some alterations in the past, the works should ensure that earlier layers of interest will be preserved where possible.
7. **Repairing Rather than Replacing:** Where it is possible the strategy should be to repair parts of the building structure or fabric which have survived.
8. **Promoting Honesty of Repairs and Alterations:** There will be a need to balance these requirements to clearly demonstrate those sections which have been replaced and the need to present the buildings as a coherent design and achieve continuity of finish.
9. **Using Appropriate Materials and Methods:** Thorough research is required to specify appropriate materials especially with regard to slate, brick, stone, timber and lime plaster.
10. **Ensuring Reversibility of Alterations:** To facilitate the possibility of the replacement of repairs or interventions at a later stage, materials and techniques should be carefully selected.
11. **Avoiding Incremental Damage:** Ensure that the loss of historical fabric and details is avoided.

We believe that following these steps facilitates a 'Conservation-led best practice' approach with conservation principles considered in arriving at the appropriate professional judgments.

1.4 Building Details:

Address:	Main Street, Kilmagig Lower, Avoca, Wicklow
National Grid Reference:	X,Y = 52.860821, -6.21738
Record of Protected Structures:	N/A
Conservation Area / ACA Designation:	N/A
Recorded Monument Reference:	N/A
Planning Authority:	Wicklow County Council
Land Use Zoning:	Primary Zone – To create a consolidated and vibrant mixed use settlement centre that is the focal point for the delivery of the retail, commercial, community and activity needs of the local population and its hinterland, and to promote this area for residential and tourist uses with an animated and high-quality streetscape, whilst ensuring the protection of the special character and heritage of this area.
Planning History:	A search of the planning application records on Wicklow County Councils website showed no records of any planning applications in respect of the subject site.

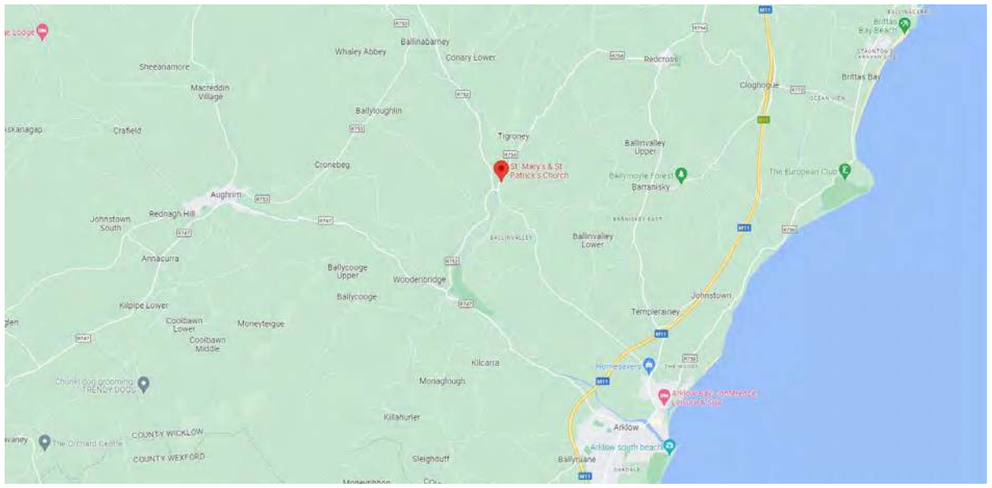


Fig 1: Site Location. Source: Google Maps

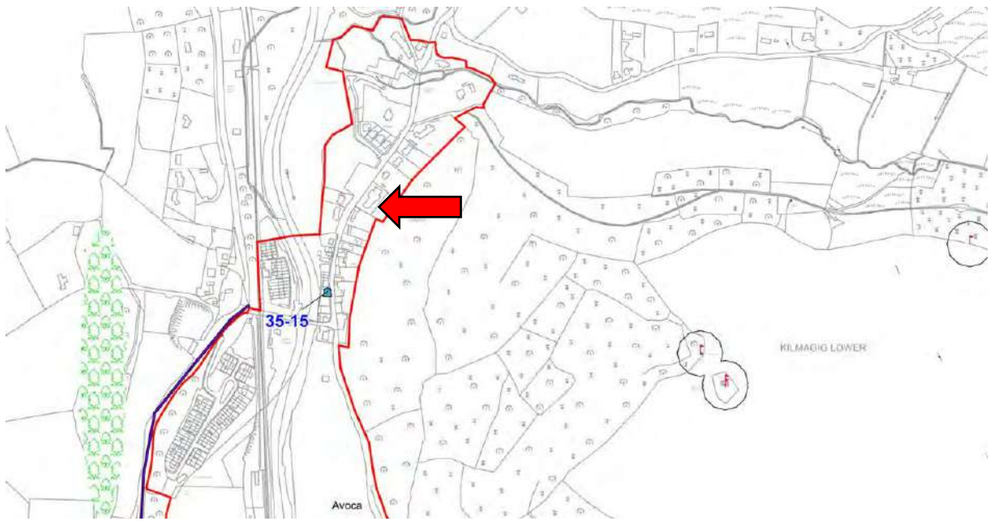


Fig 2: Extract from Avoca Town Plan Map No.2, Wicklow County Development Plan 2022-2028

1.5 Description of the building

SS Mary & Patrick's Church is in Avoca, Co Wicklow near to Arklow. According to Rev. P. Dempsey, the parish was once known as 'Newbridge' up until the late 1800s, before being known as 'Ovoca' during Anglican rule in Ireland, and more recently known as 'Avoca', which translates as "the great river". The parish and district are sited within the townland of Kilmagig, which translates from Irish to mean "Church of the Windy Plain" as noted in the publication "Avoca: A History of the Vale".

SS Mary & Patrick's Roman Catholic Church, formerly known as the Church of St Patrick's, commenced construction with the foundation stone being laid in 1860, and the church completed and dedicated in 1862. The church replaced an existing church in the village dating from 1790, which became too small to serve the community due to the large colony of miners that settled in the district, and instead became the National School. The church was commissioned by Very Rev. Patrick Kearney PP and the architect is listed as E O'Kelly from Bray. There is much confusion about O'Kelly's name as there were many iterations used such as 'Edmund William O'Reilly', 'E.W.O'Reilly', 'E. O'Kelly', 'Edward Kelly' and 'E.W.O'Kelly'.

The church was built in French Ornamental Gothic style. The church is a detached building, cruciform in plan with an octagonal sacristy with pyramidal roof to the north-west corner and a square form belltower with pyramidal roof to the south-west corner. A natural slated pitched roof set on timber trusses with modern steel ties throughout, smaller pitched slated roofs to entrance lobbies, slated pyramidal roof to the sacristy and a stone pyramidal spire roof to the belltower, with cast-iron rainwater goods throughout. A large steel framed pictorial stained-glass window set in a stone surround fills the north-east end of the church, behind the alter, with the remaining windows flanking the side aisles, transepts, and south end of the nave, being steel framed leaded glass windows set in stone surrounds with pointed arch heads. The ceiling of the church is timber which has been painted dark in colour, and the main walls are plastered internally. A small choir balcony exists at the southern end of the nave, extending the full width of the church, accessed internally from the rear of the nave, and it assumed to be original, due to the markings seen on the steel posts supporting same.

The main entrance is from the side entrance porch on the south-west façade entering the transept, with a corresponding side entrance porch on the south-east façade entering the corresponding transept, another entrance porch on the south end of the nave, which would have been the original entrance and position of the original Baptistry but now rarely used, and an entrance porch to the north end of the south-west façade which provides access to the single storey octagonal sacristy which adjoins to the alter.

The belltower on the south-west corner has an entrance door on the west, and internally there is a wooden stair that extends to the upper areas of the spire where the bell is housed. There is a choir balcony to the south end of the nave, extending the full width of the church, which has an internal connection to the belltower.

As noted in The Freeman's Journal. 18 August 1862, "*the church is 110 feet long in the clear, the breadth of the nave is 32 feet, and the breadth of the transepts is 64 feet*".

Siting

The church is sited on an elevated site, on the eastern side of the Main Street, to the east of the river Avoca, with the only access to the site from the northern end of the site directly from Main Street. The site is bounded to the west by Main Street, with the church slightly set back from the road and behind iron railings with matching gate and square gate pillars, and to the east by a historic random rubble stone wall which bounds the site from the Kilmagig Woods which is a heavily forested steep incline. It is understood that the wooded area to the east of the site, is in the same ownership as the church, and plans to cut back some of the vegetation here are under consideration.

The church is surrounded by hardstanding landscape, with the site largely finished in impervious tarmacadam, and the ground surface that abuts the building in some areas is a concrete upstand extending between buttresses, and to the entrances on the south-west a modern tactile paving has been added. The perimeter of the building is finished with hardstanding, which is level to a large degree.

Construction

In the Irish context, traditional buildings include those built with solid masonry walls of brick and/or stone, sometimes with a render finish, with single-glazed timber or metal windows and a timber-framed roof; usually clad with slate but often with tiles, copper, or lead. Traditional masonry walls do not contain a cavity. In stone construction the core or central portion of the wall was often filled with small stones and lime mortar. Solid masonry walls were not built to keep moisture out, rather they relied on their thickness to cope with atmospheric moisture, being sufficiently thick to ensure that drying out took place before moisture from rainwater passed through the wall to cause damp on the inner face. The breathable lime plaster allowed the moisture in the walls to dry out to the external air. Virtually all buildings constructed in Ireland pre 1940 were built of this type of masonry construction. It is essential that all materials & finishes, including mortars, renders & plasters, used on traditional walls are porous to allow the natural movement of moisture. This type of construction, referred to as "Historic Building Fabric", requires a constant temperature of circa 15°C to eliminate and/or control potential decay mechanisms. To further reduce the risk of decay, any potential for water ingress needs to be eliminated, this means a well-maintained roof, effective rainwater management, sufficient ventilation & air circulation.

The roof structure is a purlin roof with central crossing, formed of timber trusses at regular bay intervals, with timber purlins & timber common rafters to which timber sheathing has been fitted, which is carrying the exterior natural slate finish. The truss ends & common rafter ends bear onto a thick masonry wall, & a review of same in the transept found these to be in good condition. The roof structure has undergone alteration, with the insertion of steel ties connecting the trusses, which was undertaken c.1940, and creates a secondary web of structure as one looks at the roof interior. Traditionally, these roofs would have been un-insulated, and this is understood to be the case at SS Mary & Patrick's Church. The roof finish is in keeping with traditional buildings, a natural slate roof of equal courses and equal widths, lead detailing, stone ridge tiles and stone copings to the gables, moulded cast iron gutters supported from decorative brackets fixed to stone wall, connecting to cast iron downpipes.

SS Mary & Patrick's Church is constructed with traditional solid wall stone construction with a pitched roof with a natural slate finish. The church would have originally had lime pointing to the stone externally and breathable lime plaster to the interior, although we understand through research of the historic analysis and site inspections, that the exterior pointing has been replaced with impervious cementitious pointing to almost all areas and the interior plaster finish has been replaced in some instance with a gypsum plaster and coated with a thick impervious paint finish, factors which prevent breathability and the natural drying out process in a moisture cycle, which have contributed to the decay and deterioration of the building fabric.

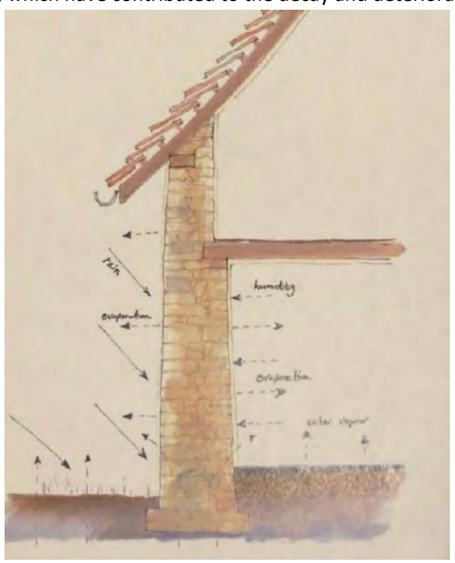


Fig 3: Traditional Building Construction: lime plaster inside, lime pointing, lower ground level outside, wall gets wet & dries out constantly. Earth outside absorbs the runoff, and it is much lower than the inside floor.

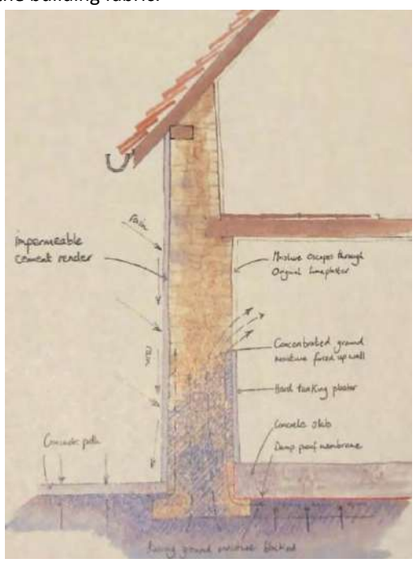
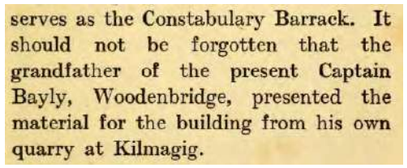


Fig 4: Impact of modern materials on Traditional Construction: impermeable pointing outside, hard ground outside, hard plaster inside (in part), wall is saturated and cannot dry out. Excess moisture in wall evaporates through the soft part only, the remaining lime plaster.

Materiality

The church was built from local stone, constructed of two types of stone; granite and local greenstone – or Greywacke – which is a dark grey, poorly-sorted sandstone with more than 15% clay content. In keeping with Gothic style, the granite is prevalent in the detail elements, such as cut stone window surrounds, doorways, and buttresses, while the Greywacke comprises the main coursed rubble stone facades.

As noted in 'Avoca: A History of the Vale' by Rev P Dempsey, 1912, the Greywacke was sourced locally from Kilmagig, with the granite possibly sourced from Ballyknockan.



serves as the Constabulary Barrack. It should not be forgotten that the grandfather of the present Captain Bayly, Woodenbridge, presented the material for the building from his own quarry at Kilmagig.

Fig 5: Extract from "Avoca: A History of the Vale" (Above)
Fig 6: Greywacke and Granite Exterior of Church (Right)

The 1860s construction would have used a sand & lime mortar to bed and point the stone which is 'soft' and vapour permeable. The north-east façade is the only localised area of sand & lime pointing which was re-pointed c. 10-15 years ago. According to Michael Allen, the mix used was a 6:1:1 which would equate to a six-part sand, one lime and one part cement, so a hybrid mix of lime & cement. The remainder of the church appears to have been re-pointed with a very hard sand & cement pointing with raised pointing detail. In the Summer of 2018, FKP & Shane Nolan of Nolan Group, carried out a limited inspection of the original bedding mortar where it could be seen behind the sand and cement pointing, and it was noted as being extremely deteriorated due to repetitive freeze thaw action.

The replacement and patching of the original internal finish, with a sand & cement plaster mix and gypsum plaster, both of which are non-flexible and impervious, have resulted in failing, becoming boast and turning to powder, due to exposure to damp conditions.

Internally there is an interesting lined out pattern on the plaster finish which imitates the exterior stone pattern, as it is a random ashlar pattern, which is a unique feature of the interior. This pattern exists for the most part in the transepts and aisles, apart from where repairs have been carried out, and the three walls bounding the alter have been finished with a simpler lined-and-ruled finish.

Furthermore, the impervious paint finish, present in almost all areas, which includes the stencilled areas, are sealing the walls and preventing moisture evaporation which is causing the paint finish to blister and decay. In is worth noting the stencilled finish, which is seen to the main church walls at approx. 1.5m high and to the top of the walls and around window features, has no historic basis and is presumed to have been introduced to SS Mary & Patrick's Church during the last 50 years or so, likely influenced by modern trends in decoration. Similar decorative schemes are seen in other churches, including that of St Aidan's in Enniscorthy.

Fig 7: Internal Wall finish with random ashlar pattern and decorative stencilling

Fig 8 & 9: South West Elevation close up – indicates raised pointing detail. Rainwater pipe to belltower does not extend to full-height. Source: Robert French, c. 1865-1914

Historic Alterations

The church is understood to have undergone many alterations during the course of its existence, and we have sought to identify these alterations as best possible, to better understand the works carried out and the impact of these alterations on the condition of the building.

From undertaking historic research, below is our understanding of some refurbishment that has been undertaken in the church throughout its lifespan:

- **1901:** Works carried out to refurbish the stained-glass window in 1901 *(as noted in "A Christian Journey")*
- **1913:** As noted in 'Wicklow News-Letter & County Advertiser', Sat 12 Apr 1913, a sale of furniture and engravings, the Presbytery Avoca for Rev P Demspey C.C was to be held on Wed 16 Apr.
- **1918:** As noted in 'Wicklow News-Letter & County Advertiser', Sat 28 Sep 1918, a grand ball in aid of Church Redecoration Funds to be held Fri 04 Oct.
- **1919:** As noted in 'Wicklow News-Letter & County Advertiser', Sat 04 Jan 1919, a ball in aid of Church Redecoration Funds to be held.
- **1919:** As noted in 'Wicklow News-Letter & County Advertiser', Sat 18 Jan 1919, a grand victory dance in aid of Church Redecoration Funds, organised by the Avoca Church Decoration Committee to be held.
- **1928:** Storm damage : 1928 ?? 'Wicklow News-Letter & County Advertiser'
- **1939/40:** Re-roofing in 1939/40. As noted in "A Christian Journey" and further qualified by segment in the Wicklow People, 05 Aug 1994, the re-roofing project was undertaken by Fr William Murphy (P.P. between 1935-1944) during a time of poverty in the parish.
- **1953:** Storm damage to church roof : Wicklow People, 28 Feb 1953
- **1962:** Interior works for centenary year 1962: Voluntary work undertaken including painting, decorating, new floor being laid, new heating and lighting systems *(as noted in pg55-56 of "A Christian Journey")*
- **2000:** Exterior & interior works including redecoration. Photos provided by Fr Michael Murphy P.P. which appear to date from this time, show extensive scaffold to the bell tower and in part of the valley gutters along with rainwater goods under restoration, and show extensive scaffolding internally to the nave, and deteriorated stencilling decoration, suggestive that it existed at this time and was restored.
- **2001:** Death of Sean Kavanagh, Knockanree, occurred 19 Dec 2000, who is commended for the refurbishment of the church bell: Wicklow People 11 Jan 2001 *(FKP comment: date of bell refurbishment unknown)*
- **C.2010:** Repointing of north-east façade, behind the main alter, c.2010. Noted by local parishioner, PJ Smyth, as works undertaken by Mark Whelan.

Late 20th Century / Early 21st Century

The church was used extensively during the filming of a BBC television drama "Ballykissangel" which aired between 1995 and 2001. During this time, the village of Avoca and particularly the church were visited frequently by tourists. This is worth considering, as around this time, the church underwent an extensive renovation internally. During the summer of 2000, filming was postponed due to the outbreak of the foot and mouth disease in the UK, and as such renovation works appear to have been undertaken during this period.

Fig 10: External photo of Avoca Church, Sep 2000, by Craig Howell

Fig 11: External photo of Avoca Church, rainwater goods, assumed 2000, provided by Fr Michal Murphy P.P.

Fig 12: External photo of Avoca Church, south façade, assumed 2000, provided by Fr Michal Murphy P.P.

Fig 13: Internal photo of Avoca Church, decoration, assumed 2000, provided by Fr Michal Murphy P.P.

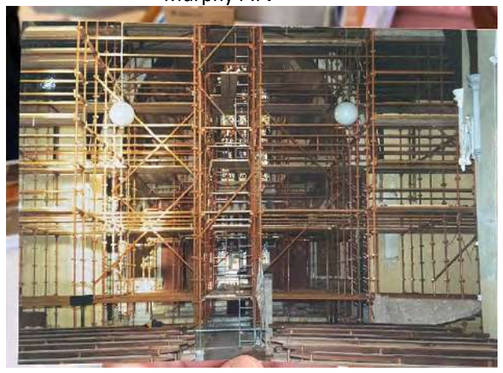


Fig 14: Internal photo of Avoca Church, extensive scaffold to Nave, assumed 2000, provided by Fr Michal Murphy P.P.

Fig 15: Internal photo of Avoca Church, internal plaster repair work to East Transept, assumed 2000, provided by Fr Michal Murphy P.P.

2. Observations

2.1 Climate & Ventilation

2.1.1 Sunshine: Due to the site being bound to the east by the heavily wooded Kilmagig Woods, the north-eastern side of the church remains shaded for extensive periods of the day. The lack of sunshine has a contributing factor to the deterioration of the building fabric as it does not assist with the natural drying out process.

2.1.2 Wind: As identified earlier in this report, the church is on a north-east / south-west axis, and the prevailing wind being south-westerly. The south porch, belltower, and north-west side of the nave experience significant the highest level of wind, and in particular wind driven rain which has a contributing factor to the deterioration of the building fabric.

2.1.3 Rainfall: A review of Met Eireann's report on distribution of driving rain in Ireland for 1991-2020, shows that Avoca and the surrounding area experience some of the highest levels of rainfall in the country, as well as moderate wind speeds, which when examined further result in Avoca being within an area that experiences very severe to extreme wind driven rain. See extract below, Fig 9 from "Distribution of driving rain in Ireland", Climatological Note, No.17, Met Eireann, C Mateus & B Coonan – 2022 showing the exposure classes for wind driven rain for the period 1991-2020 for Ireland.

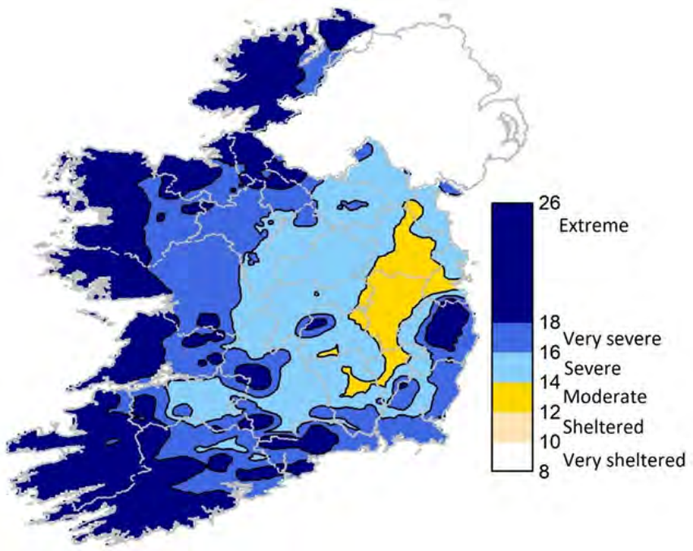


Figure 9: Map airfield index (m_A) for the period 1991 – 2020 for the Republic of Ireland. Suggested classes of exposures: very sheltered (<10), sheltered (10 – 12), moderate (12 – 14), severe (14 – 16), very severe (16 – 18) and extreme (18 – 26).

Fig 16: Map showing 'Distribution of driving rain in Ireland' by Met Eireann, 2022**.**

In addition, the report from Met Eireann, records the driving rain index for Vertical Surfaces, for the period 1991-2020, which considers the height above sea level, and in relation to Avoca, the class of exposure is severe. This type of research is the first of its kind published in Ireland, as previous driving rain calculations did not consider the effect of gravity on the flight of wind-driven rain onto a surface, or the geological features present.

In conclusion, SS Mary & Patrick's Church in Avoca, due to its location, is exposed to more extreme weather events than many other areas, and consequently the building experiences greater weathering and the integrity of the building envelope and its resistance to moisture comes under greater pressure.

2.1.4 **Ventilation:** During the inspections, it was noted that to all areas of the church, there were no operational windows, therefore no means of naturally ventilating the church. There is also no means of mechanical ventilation provided. This is a contributing factor to preventing the building from drying out and for the prevailing smell of dampness within the building. It is unclear if the louvre vents to the top of the bell tower (seen externally) are open or blocked, as access to the top of the bell tower internally was not possible due to health and safety reasons, however if this is providing ventilation it is limited to high level only.

2.2 Exterior

2.2.1 Roof & Rainwater Goods: Generally, the roof appears in fair condition with minimal slipped and broken slates, although roof junctions, particularly the valleys between the lower roofs and walls, appear in poor condition, with signs of water ingress, algae staining and in an isolated area on the south-west corner abutting the belltower, buddleia growth is apparent between the slates and at the flashing abutment which is a combination of slate and lead. The stone spire to the belltower has heavy algae staining primarily to the northern side. In reviewing sources to determine the historical alterations to the building, it is noted that the building was re-roofing in 1939/40, although it is possible that the roof was re-roofed again at a later date as the condition is reasonable. The condition and extent of the lead flashing details at abutments is poor and does not comply with current codes of practice.
Generally, the rainwater goods are in poor condition, it was noted during the most recent inspections that the gutters were damaged, blocked, misaligned, and had vegetation growing within in many locations, the gulley's overflowing and backed up, and generally the rainwater system would benefit from a full review and refurbishment. It is clear from historic research, that the rainwater pipe extending along the east side of the belltower, has been extended higher to the underside of the louvred window openings at the base of the spire. As noted in section 2.1, the extent of rainfall in the area is quite significant, and it could be that the rainwater goods are no longer designed and sized appropriately to deal with the amount of rainwater experienced. As noted in above, from photographs provided by Fr Michael Murphy P.P., it is possible the rainwater goods were refurbished circa.2000, although this is not definitive.

2.2.2 Facades: Generally, the facades appear in fair condition, although the extent of sand & cement pointing is extensive and while visually this has not resulted in apparent defects, it is contributing profoundly to the deterioration of the masonry walls and internal finishes. As noted above, upon closer inspection it was noted that the sand & cement pointing which is unsuitable for this building has caused deterioration of the bedding mortar due to repetitive freeze thaw action. The natural vapour permeability of the structure has been compromised by the modification of the exterior pointing to sand & cement and the combination of various plaster types applied to the interior, with the impervious paint finish applied throughout.
There are localised areas of the facades where staining is present, which is below window sills, and behind downpipes, which are most likely due to leaking rainwater goods or insufficient shedding of water away from the building.
Irregular areas of lime leaching were observed on the stone facades of the bell tower, which is believed to be due to the combination of the sand & cement pointing throughout, and the presence of biological algae growth internally which is producing oxalic acids and reacting chemically with the building fabric (see greater detail described in the interior condition report below).

2.2.3 Ground Condition: Generally, the exterior ground condition is comprised of hard surfaces, which is not conducive to free drainage and conducts moisture to the walls leading to rising damp. The current finished surfaces, primarily tarmacadam and concrete, are modern materials and the original surface was likely gravelled. In addition, the ground surface is reasonably level with few falls to take water away from the buildings, and as such this is resulting in water ponding at entrances and ingress of moisture to the interior. Algae growth is visible in low-lying areas where water ponding occurs.

2.3 Interior

2.3.1 Roof Structure & Ceiling: Generally, the roof structure appears in good condition, although all elements are decorated so this may be concealing damage. During the inspection in July 2023, it was possible to gain high-level access to the interior to view the ceiling and in particular the bearing of the timber trusses and timber common rafters on the top of the masonry wall, and from the limited inspection it appears in good condition with no obvious signs of decay although shakes in the timber members were observed.

2.3.2 Walls: The following is a summary of the interior wall condition by area:

Main Church Nave Walls: Generally, in poor condition. Previous attempts to repair the plaster finish are apparent, and as such it is understood that there are various types of plaster finish on these walls. The eastern wall shows signs of moisture with paint finish flaking and missing, and in some cases has come away completely to expose the wall finish. The western wall shows similar signs of moisture and fabric decay, particularly around the southern end. Much of the low-level plaster to both sides of the nave is boast.

Main Church West Transept Wall: Generally, in poor condition. Previous attempts to repair the plaster finish are apparent, and as such it is understood that there are various types of plaster finish on these walls. Much of the low-level plaster on all sides of the transept shows signs of moisture, is boast, and the paint finish is flaking and missing. Efflorescence of the plaster surface is also apparent. The north wall of the transept has been extensively re-plastered at low-level to an unconventional extent, with a smooth plaster finish where the random ashlar pattern has not been replicated and is in poor condition.

Main Church East Transept Walls: Generally, in poor condition. Previous attempts to repair the plaster finish are apparent to all walls, and as such it is understood that there are various types of plaster finish on these walls. Plaster repairs have been carried out at low-level, corresponding with the window sill level down to ground, which has a smooth plaster finish where the random ashlar pattern has not been replicated and is in poor condition and the plaster generally boast. The east transept shows signs of efflorescence at low level where the area has been decorated including stencilling detail. Area of plaster at corner between transept and nave is damaged and the paint finish in proximity is flaking.

Main Church Altar Walls: Generally, in fair condition. It is fair to assume these walls have been replastered in modern times as these walls all have a lined-and-ruled pattern which is inconsistent with the rest of the church walls. The east side of the alter, which has 4 no recesses on this wall, shows signs of efflorescence within the niches and the plaster here is boast and deteriorated with tide marks also evident.

Main Church Choir Balcony Walls: Generally, in fair condition. Walls finished with random ashlar pattern and stencilling detail to window surround. The windows are noted as having heavy mould and fungal staining to the stone surround, with water staining to the stone reveals, consistent with water ingress around the windows.

Sacristy & Adjoining Porch Walls: Generally, in poor condition, due to significant water ingress. Within the interior, the south-west wall between the sacristy and porch has signs of water ingress, mould, and dry rot in the form of fruiting bodies apparent on both sides on the adjoining wall and to the exterior wall in which the entrance door is set, consistent with water ingress at roof level. These areas of wall and ceiling are significantly deteriorated. To the north-east wall of the sacristy, signs of water ingress are seen at low level below the window, consistent with rising damp and possibly the rainwater downpipe located in the corresponding position on the exterior face of the wall.

North-West Porch Walls: Generally, in poor condition, with signs of dampness internally noted, particularly around the entrance door and internal door between porch and transept. Most noticeably at high level over the internal doorway, corresponding with the gutter over. Plaster moulding to head and jambs of door surrounds has been affected by water ingress and is blistered and peeling, with paint flaking away and plaster finish missing in part where it has decayed so significantly. Potential that the external walls in this porch have been drylined, as this was found to be the case in the corresponding porch on the opposite transept and the south porch.

North-East Porch Walls: Generally, in fair condition, although signs of dampness internally noted, particularly around the entrance door and internal door between porch and transept. Most noticeably at high level over the internal doorway, corresponding with the gutter over. Plaster moulding to head and jambs of door surrounds has been affected by water ingress and is blistered and peeling, with paint flaking away, and corrosion noted to the edges, consistent with a metal bead corroding, suggestive of a modern repair having been carried out to this area. Appears that works have been carried out in this area in the past to alleviate dampness, with drylining noted to the east wall (RHS upon entering) which is not vented. It would be recommended to open up and investigate what is concealed behind. The pointed arch-head reveal to the top of the window on the east side also shows signs of corrosion, consistent with a metal bead corroding, consistent with this being a modern repair including drylining.

South Porch & Original Baptistry Walls: Generally, in fair condition. Localised signs of damp around jambs of external door and frame and reveals of window. Appears that works have been carried out in this area in the past in an attempt to alleviate dampness, with drylining noted to the south west wall (LHS upon entering) which is not vented. It would be recommended to open up and investigate what is concealed behind.

Belltower Walls: Generally, in very poor condition. Significant efflorescence and staining to all walls with piles of salt deposits on the floor in the vicinity of the exterior walls, and cracking and crazing to the plaster finish. The finished plaster wall surfaces are heavily stained in a variety of colours (red, brown, and vibrant green colours) which is consistent with algae presence. The lack of ventilation, presence of daylight, and high level of relative humidity in this space have contributed to this rapid biological growth. The biological algae growth, is producing acids which react chemically with the building material causing decay, forming spotty staining, damp staining, and most probably acts as catalyst for the lime leaching seen on the exterior face of the bell tower. The condition of the structural stone walls could not be assessed at this time due to concealment by the plaster finish, but often heavy biological growth, can hasten the decay of stone by the production of oxalic acids, and therefore remedial works to address this issue should be undertaken as soon as possible.
Within the bell tower, the timber stairs providing access to the top of the tower, is showing signs of decay where abutting the exterior wall, in the form of rot and decay by wood-destroying insect, although it is not clear if the infestation is active or dormant.

2.3.3 Floor: The floor finish generally is carpet, with ceramic small format tiles to the aisles and lobbies. Carpet finish was noted to the sacristy and associated lobby, although vinyl tile was partially visible below, which should be checked for asbestos containing material.
Staining, assumed to be water, was noted at the rear of the church to the carpet, below the balcony, perhaps associated with a fault in the heating system.

2.3.4 Windows: As noted above, there are no operational windows in any area of the church, therefore no means of natural ventilation. There is a stained-glass window in the apse, with clear glass windows to the nave and transepts, and clear glass windows to the remaining ancillary areas serving the church. The clear glass windows are all historic single glazed diamond leaded light windows set in stone surrounds. Secondary glazing exists to the stained-glass window to the apse, the facing window at the rear of the nave and to the windows in the bell tower.
The windows in the belltower appear to have been modified previously to form opening sections to the base of the windows, however the addition of secondary glazing externally prevents these operating and providing natural ventilation.
The large clearstory windows to the transepts are designed to have a small central opening section, however it is noted that these have not been operational for many decades. While these sections of window are very small, they would provide a means of cross ventilation through the central area of the church if they were functional. All other windows are designed as fixed windows.

3. Recommendations

The below are preliminary recommendations based on the visual inspections and historic analysis carried out to date. All recommendations are subject to review at the next stage of the project, and all works should be overseen by a suitably qualified Conservation Architect.

3.1 Climate & Ventilation

The following upgrades appropriate to traditional buildings, should be undertaken, to address moisture ingress to the building fabric and issues with maintenance:

i. <u>Site works to reduce damp</u>.

a) Carry out an underground drainage survey to establish the underground drainage system, including position and invert levels, and to identify the condition of same. This should be recorded on a site survey drawing.

b) Carry out all repairs / replacement of damaged sections of underground drainage system identified in survey report, including assessment of capacity of ground water gulley's to ensure they are sized appropriately to effectively take water away from building.

c) Investigate ground water level and profile of foundations: form 2 no. trial pits (one within tarmac surface and one within concrete surface – exact location TBA) to approx. 900mm deep, to ascertain ground water levels.

d) Carefully remove hardstanding surface in proximity to the church to the entire perimeter of the building. This includes breaking out the tarmacadam surface and associated subsurface to a width of 1.2m and to a depth of 0.8m, without undermining existing building foundations or disturbing the original building fabric. The existing surface to the north and north-east area of the church is a slightly raised concrete strip between buttresses which should be carefully removed to match details above.

e) Install a "French drain" – 150mm diameter terracotta perforated pipe laid in a well graded granular fill (20-25mm washed and crushed stone) and wrapped in a geotextile membrane filter fabric. The pipe is to be laid at falls of 1 in 80mm and connected to existing soak away.

f) Build the ground level back up with compacted granular fill laid in 150mm sections.

g) Allow for a 150mm deep and 1200mm wide border of pea gravel as finished surface, laid to a fall of 1:40 falling away from the building, or as best possible to match existing tarmac ground level to remaining area of church forecourt. Allow for reinstatement of tarmac surface locally as required in proximity to new gravel surface.

h) Allow for fitting new ACO linear channel drain at all entrance doorways, width to match doorway, connecting into existing drainage system, to manage surface water.

i) Thoroughly flush out the whole of the installation with clean water to remove silt and debris immediately before handover.

Extract from Department of Culture, Heritage, and the Gaeltacht Advice Series in relation to reducing levels of damp in walls:

"Before considering upgrading, it is important to ensure that the wall is in good condition, that pointing is intact or rendering in good order and that obvious sources of damp such as leaking gutters and rainwater pipes are repaired. Additionally, the risk of rising damp can be reduced by ensuring that the external ground level is not higher than the internal floor level or by installing a French drain externally to improve the condition of the wall…..

Where there are persistent problems with damp, it is important to ensure that the external ground level is lower than the internal floor level and, if necessary, consider installing a French drain below ground level with a gravel finish. Water percolates through the gravel finish to a perforated drain below, following which it drains to a soakaway at a distance from the building. The rendered wall finish will generally require repair following the lowering of the ground level."

French Drains

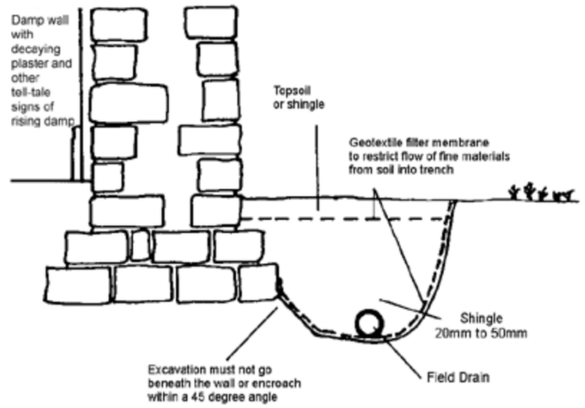


Fig 17: Sketch of French Drain proposal**.**

ii. <u>Improve ventilation.</u>

a) Restore opening section of window to existing windows on each side of the transept to allow window to be fully openable when required and to provide natural cross ventilation through this space. New ironmongery and pulley system required to allow window to be opened by persons at ground level.

b) Allow for modifying 4 no. existing side windows to Nave (two on each side) to allow window to have a new openable bottom hung casement section formed in the base of the window to introduce natural ventilation to the church, such as that seen in the photo on the right-hand side. New ironmongery and pulley system required to allow window to be opened by persons at ground level.

Fig 18: Proposal for modifying existing metal window

c) Allow for modifying 2 no. existing windows to Sacristy to allow window to have a new openable bottom hung casement section formed in the base of the window to introduce natural ventilation to the Sacristy, such as that seen in the photo on the right-hand side.

d) Allow for replacing the exterior secondary glazing system to a shorter profile to all windows in the belltower to allow the openable bottom section of the interior glazing system to function and provide natural ventilation to the belltower.

e) Within the east, west, south entrance porches, bell tower porch, and sacristy porch, allow for modifying the existing external solid sheeted timber door in each location to accommodate a metal lourved vent grille to the low-level area of the door, approx. size 600x300mm, to introduce natural ventilation to these areas. Restore and redecorate door on completion.

Fig 19: Existing window in belltower with openable section to lower section of window

f) Allow for restoring all remaining windows by cleaning down thoroughly including stone surrounds where fungal growth was noted to the interior in some locations. If possible, trickle vents should be incorporated.

g) During works, if other opportunities arise where additional natural ventilation can be achieved, such as provision for wall vents or roof vents, these should be considered and incorporated where practicable.

3.2 Exterior

The following upgrades appropriate to traditional buildings, should be undertaken, to address moisture ingress to the building fabric and issues with maintenance:

i. Repairs to Roofs

a) As observed from the height-for-hire there is buddleia growth between the slates and beneath the flashing on the high-level slated roof on the south-west corner abutting the belltower should be addressed. The slates in this area should be carefully stripped , approx. 2m wide section, from gutter to ridge, to allow for removal of the buddleia growth, treatment of area with a biocide wash, reinstating the slates in this area and renewing the flashing detail completely to the abutment with the belltower and parapet wall to upper areas with new lead soakers and lead side flashing complete as per LSA recommendations.
b) Allow for re-bedding of ridge tiles complete to nave and transepts, following remedial works to the existing lightening protection system, which has damaged the existing ridge tiles, so it is reasonable to assume a 50% replacement requirement.
c) Renew lead valley gutters completely to all low-level roofs, including new substrate, on new firring pieces, to new falls with new lead finish including counter flashing and lead to outlet, all as per LSA recommendations.
d) Renew the lead flashing detail completely to all low-level roofs, which is unsuitable, and provide new lead soakers and lead side flashing complete as per LSA recommendations.
e) Provide new leaf guard fitted to all outlets.

Fig 20: Existing lead flashing detail at low-level roof

ii. Repairs to Rainwater Goods

a) Carefully remove, repair off site, and redecorate all existing cast-iron rainwater goods (gutters, downpipes, hopper heads and brackets). Allow for providing temporary uPVC system in the interim period.
b) In the short term, essential maintenance works should be undertaken to remove vegetation from all gutters and flush out thoroughly all gutters and downpipes. All gulley traps should be jetted and flushed out and reviewed to ensure a grille is correctly fitted at the discharge point, to better manage surface water. A regular inspection programme should be implemented to check all rainwater goods, including regular clearing out of rainwater goods and periodic redecoration of ironwork to inhibit corrosion.

iii. Facades

a) Carry out investigation works to determine the extent of damage, if any, of the original bedding mortar to the exterior walls, which was identified as a concern by FKP & Shane Nolans in 2018 due to it being potentially extremely deteriorated. Allow for carrying out a series of tests, in 6 no. different locations around the external perimeter of the building (locations TBA) to assess the bedding mortar condition. Depending on results, if considerably deteriorated, it may be necessary to inject the bedding mortar with a stabiliser throughout.
b) Carefully rake out to a depth of minimum 20mm all the cementitious mortar (all areas excluding the north façade behind the alter and the belltower), treat the facades with a biocide wash prior to re-pointing, and re-point the façade with a natural hydraulic lime, either 'St Astier' or 'Roundtower' or other similar if approved by the Conservation Architect. A suitable specification would be a 1-part lime: 2.5-part sand mix, using NHL 3.5 lime and Wexford well graded sand, with a flush finish joint as seen on the north façade.
c) As the belltower does not contain public worship space, the remedial works to same can be undertaken at a separate time to those of the main church if desirable from a finance point of view, although the works remain necessary to address the deterioration of the building fabric. Carefully rake out to a depth of minimum 20mm all the cementitious mortar to the belltower façade and pyramidal spire roof, treat all areas with a biocide wash prior to re-pointing, and re-point with a natural hydraulic lime, either 'St Astier' or 'Roundtower' or other similar if approved by the Conservation Architect. A suitable specification would be a 1-part lime: 2.5-part sand mix, using NHL 3.5 lime and Wexford well graded sand, with a flush finish joint as seen on the north façade.

3.3 Interior

General: Before works commence; submit proposals to protect all Stations of the Cross and other wall mounted artefacts such as statues in high level niches, which should be taken down and carefully stored for re-erection on completion of works. Adequate protection to all areas to be provided throughout.

The following upgrades appropriate to traditional buildings, should be undertaken, to address rising damp and to remove impermeable unsuitable materials, which are causing the internal fabric to deteriorate;

i. Repairs to Roof Structure & Ceiling

No works proposed to roof structure or ceiling at this stage. During the subsequent stages of the project, consideration could be given to assessing whether suitable thermal upgrades at ceiling / roof level could be readily accommodated which could improve the thermal performance of the roof, as heat loss through roofs is typically estimated to be 25% of the heat loss of a structure.
At this time FKP were unable to determine if any works are required to the roof or ceiling area of the belltower as this area was not accessible due to the health and safety risk posed by the access stair.

ii. Repairs to Walls: Interior face of all external walls to Nave & Transepts (excluding walls bounding Alter):

a) Carefully strip internal plaster finish back to bare rubble stone background to full height of walls. Temporarily disconnect all radiators and retain pipework where possible, in the instance where the existing heating system is not being replaced in tandem with the plaster repair works.
b) Allow for retaining the decorative plaster details which are apparent to door and window surrounds and to statue niches. Should detail be found to be missing or minor damaged caused during the works, the detail should be replicated in cast plaster as required.
c) A structural assessment will ensue once walls are exposed to ensure substrate is sound, at this stage allow for helibar steel reinforcement bars at 10 no. locations, 900mm length in matching mortar beds to crack locations. Allow for applying a lime based breathable levelling coat to the inside face of the external walls to dub out any voids and secure any loose masonry, to a depth of 20mm. Finish wall surface in flat natural hydraulic lime plaster, in 3 coat build-up using NHL 2 lime and lime putty finish. The plaster finish should match the existing finish in these areas which is a random ashlar pattern. Should finances restrict this finish being undertaken, a lined-and-ruled finish should be adopted, as seen to the walls bounding the Alter. Works to be undertaken by an experienced specialist.
d) Allow new plaster finish to cure and wall to dry out prior to re-decoration. There is a benefit to allowing a duration of 12-18months for the structure to dry out, before completing the re-plaster works, should this be permissible. Re-decorate using a breathable mineral type silicone-based paint. Stencil detail not suggested to be replicated as this is a modern addition, however a dual-paint colour scheme could be considered, low-level and high-level of the walls, in reference to this detail.
e) An alternative proposal to painted plaster walls, previously suggested by FKP, would be to incorporate a new wall lining by provision of a new wainscotting detail to the nave and transepts at low level where the internal plaster finish has been stripped, and finish the upper section of the wall with lime plaster and paint finish. The new wainscoting detail could be 1350mm high formed from t&g boarding, with an 80x30mm bull-nosed top rail, and 150mm high torus skirting to base, all formed on metal top hat section studs fixed to wall, to leave void of 70mm to rear, to provide a means of ventilation to the wall, all completed with paint finish. In addition, provision of a breathable insulated board (calsitherm, gutex, diathonite or other) between the metal studs to increase the thermal resistance of the structure could be incorporated into the detail, as heat loss through walls is typically estimated to be 35% of the heat loss of a structure. A proposal such as a 60mm Gutex wood fibre board between the studs, which would enhance comfort of users. Careful consideration would need to be given to proposing a new wall lining as it would alter the appearance of the building.

iii. Repairs to Walls: Interior face of all walls bounding Alter

a) Allow for carrying out sampling, in 3 no. different locations (locations TBA), and specialist analysis of the plaster sample, to determine the composition of the internal plasterwork as it is unclear if this is a lime or cement / gypsum-based finish.
b) Should the sample be found to contain cement or gypsum, it would be advisable to remove and re-plaster in a breathable lime plaster. Specification and methodology as outlined above, with a lined-and-ruled finish to match the existing finish seen in this location. Re-decorate as outlined above.

c) The 4 no niches recessed into the east wall should be re-plastered, taking care to protect the decorative plaster details forming the openings. Specification and methodology as outlined above, with a smooth flat finish to match the existing finish seen in this location. Re-decorate as outlined above.

iv. Repairs to Walls: Sacristy & Adjoining Porch

a) Works to be undertaken following remedial repairs at roof level to address water ingress and ensuring adequate time to allow interior to dry out.
b) Strip internal plaster finish to adjoining porch complete and to the south interior wall of the Sacristy adjoining the porch where dry rot is present.
c) Treat the area of rot by removing the fruiting bodies and visible spores. Clean all wall and ceiling surfaces to remove growth. Should any timber be found to be present in these locations they will require a structural assessment to determine if they require replacement. Treat area complete with a fungicidal microemulsion spray treatment.
d) Replaster areas as outlined above, lined-and-ruled finish to match the existing finish in this location.
e) Re-decorate as outlined above all walls and ceilings in the sacristy and adjoining porch.

v. Repairs to Walls: North-West, North-East and South Porches

a) Works to be undertaken following remedial repairs at roof level to address water ingress and ensuring adequate time to allow interior to dry out.
b) Remove the dry lining in these areas to allow for further investigation of wall condition behind.
c) Strip internal paint finish to porches complete. During this process, take care to protect and retain the decorative plaster details which are apparent to door and window surrounds and to niches. Should detail be found to be missing or minor damaged caused during the works, the detail should be replicated in cast plaster as required.
d) Carry out localised re-plastering where boast and saturated, which appears to be limited to low level around the doorways. Replaster areas as outlined above, with a smooth flat finish to match the existing finish seen in this location.
e) Re-decorate as outlined above all walls

vi. Repairs to Walls: Belltower

a) Remove timber access stair within belltower, from Choir Balcony level up to top, as it is decayed and requires removal to facilitate remedial works to the walls. Allow for reinstatement of similar timber stair on completion of works to allow for safe access and maintenance to the upper areas of the belltower.
b) Carefully strip internal plaster finish back to bare rubble stone background to full extent of walls. There is a benefit to not carrying out the re-plastering works straight away, rather allowing a duration of 12-18months for the structure to dry out, before completing the re-plaster works. This may be feasible in this area as it is a non-worship area. It is worth considering leaving the internal walls of the belltower as exposed stone and not re-instating a plaster finish and this will aid the breathability of the structure and aid the natural drying-out process of the walls.
c) Clean all wall surfaces to remove growth. Should any timber be found to be present in these locations they will require a structural assessment to determine if they require replacement. Treat area complete with a fungicidal microemulsion spray treatment.
d) A structural assessment will ensue once walls are exposed to ensure substrate is sound, at this stage allow for helibar steel reinforcement bars at 5 no. locations, 900mm length in matching mortar beds to crack locations. Allow for applying a lime based breathable levelling coat to the inside face of the external walls to dub out any voids and secure any loose masonry, to a depth of 20mm. Finish wall surface in flat natural hydraulic lime plaster, in 3 coat build-up using NHL 2 lime and lime putty finish. The plaster finish should match the existing finish in these areas which is a smooth flat finish. Works to be undertaken by an experienced specialist.
e) Allow new plaster finish to cure and wall to dry out prior to re-decoration. Re-decorate using a breathable mineral type silicone-based paint.

vii. Repairs to Floor: No works proposed to internal floor finish at this stage.

viii. Repairs to Windows: Works to windows captured in Section 3.1 above.

For works proposal for mechanical and electrical systems, refer to J.N.G. Traynor's accompanying report.

All proposed works should be undertaken in adherence with the practices set out in the Architectural Heritage Protection Guidelines for Planning Authorities. The works should always be carried out in accordance with the Advice Series published by the Department of Culture Heritage and the Gaeltacht and is predecessor Departments.

Places of Worship – The conservation of Places of Worship (2011)
Roofs – A Guide to the Repair of Historic Roofs (2010)
Bricks – A Guide to the Repair of the Historic Brickwork (2009)
Windows – A Guide to the Repair of Historic Windows (2007)
Iron – The Repair of Wrought and Cast Ironwork (2009)
Maintenance – A Guide to the Care of Older Buildings (2007)
Energy Efficiency in Traditional Buildings (2010)

4. Potential Phasing of Work

While it would be beneficial to undertake the proposed works in a single phase, and for the building to remain open during the works, it is unlikely that this will be easily accommodated due to financial constraints and due to the potential health and safety concerns if the building were to remain open to the public while works were undertaken.

We have sought to identify a possible sequencing and phasing of work that could be adopted which considers all aspects of the work, while allowing the church to remain open, albeit with areas out of bounds temporarily while work is undertaken. This has been devised based on firstly ensuring safe access to the building for parishioners and clergy, followed by protecting and safeguarding the building fabric, and in all cases ensuring safe access for undertaking the works. A proposal for sequencing the works would be as follows:

Phase 1 – Roof & Rainwater Goods
Phase 2 – West Transept & Sacrist
Phase 3 – East Transept
Phase 4 – Nave & South Porch
Phase 5 – Belltower
Phase 6 – Siteworks

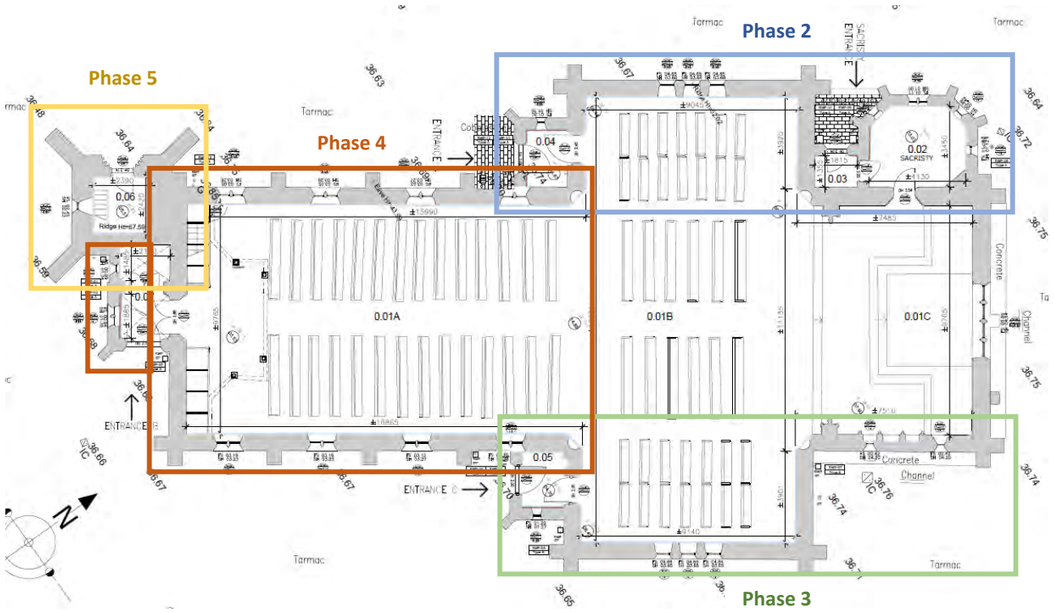


Fig 21: Plan of church identifying possible sequencing

As noted in the recommendations section above, the repair of internal plasterwork alone is not a solution in isolation which can be carried out, as this would need to be undertaken in conjunction with works to the external walls, to remove the modern impervious materials and allow the wall to act as originally intended allowing the natural movement of moisture through the structure.

Phase 1: Repairs to the Roof and Rainwater Goods throughout. These works should be undertaken at the earliest opportunity to eliminate water ingress and prevent further deterioration of building fabric due to water ingress. Once this item is addressed, works to restore the interior can be undertaken.

Phase 2: Repointing, Ventilation Improvement Works, Replastering and Decoration Works. The sacristy and adjoining lobby is subject to a dry-rot outbreak and damp conditions which pose a health & safety risk to persons occupying these areas. Internally in the main church the internal plaster finish is deteriorated and in some areas to such an extent that plaster is falling off the walls and the radiators which are mounted to the walls are coming away, both items that pose a health & safety risk to persons occupying these areas. By undertaking re-pointing works to the exterior, modifying the windows and doors to incorporate natural ventilation, re-plastering the internal wall surfaces and re-decorating, the deteriorated building fabric in these areas should be rectified.

Phase 3: Repointing, Ventilation Improvement Works, Replastering and Decoration Works. The internal plaster finish to the east transept and adjoining porch is deteriorated and in some areas to such an extent that plaster is falling off the walls and the radiators which are mounted to the walls are coming away, both items that pose a health & safety risk to persons occupying these areas. By undertaking re-pointing works to the exterior, modifying the windows and doors to incorporate natural ventilation, re-plastering the internal wall surfaces and re-decorating, the deteriorated building fabric in these areas should be rectified.

Phase 4: Repointing, Ventilation Improvement Works, Replastering and Decoration Works. The internal plaster finish to the nave and south porch is deteriorated and in some areas to such an extent that plaster is falling off the walls and the radiators which are mounted to the walls are coming away, both items that pose a health & safety risk to persons occupying these areas. By undertaking re-pointing works to the exterior, modifying the windows and doors to incorporate natural ventilation, re-plastering the internal wall surfaces and re-decorating, the deteriorated building fabric in these areas should be rectified.

Phase 5: Repointing, Ventilation Improvement Works, Replastering and Decoration Works. The internal plaster finish to the belltower is in extremely poor condition with very damp conditions and algae growth throughout, however as this area is not accessible to the public, the health & safety risk is lower and therefore this element of work has been prioritised to a lower level. This area of the building is isolated from the others and could be undertaken at any stage. By undertaking re-pointing works to the exterior, modifying the windows and doors to incorporate natural ventilation, re-plastering the internal wall surfaces and re-decorating, the deteriorated building fabric in these areas should be rectified.

Phase 6: Site works to reduce damp. The groundworks proposed to form a French drain to the perimeter of the building would benefit from being carried out at an earlier stage to assist in removing a source of water ingress from the walls, however, this work can still be scheduled for a later phase and will still aid the natural movement of moisture in the wall. By ensuring the existing underground drainage system is flushed out and checked regularly for blockages as part of a regular maintenance programme, this element of work can be undertaken at the later stages of the work.

In accommodating works to the interior of the building, consideration will need to be given to the protection and storage of loose items such as pews, statues, stations of the cross and other plaques seen in the church, as well as internal joinery, windows, decorative plaster features and mechanical and electrical installations. Additionally, as previously noted by FKP, should internal sections of plaster be removed without immediate re-plastering / re-decoration in order to allow the walls to dry out, a temporary solution to improve the appearance of the church could be considered. A suggestion would be to install some hessian panels / Tyvek over the areas of exposed wall which could be plain or printed (such as a decal similar to the existing stencil paint pattern), allowing the works area to be concealed but improving the appearance in the interim.

The above sequencing proposal is subject to further review following further investigations and it would be beneficial to discuss same with a suitably qualified contractor to understand their approach and programming. The above proposal has not taken into account any upgrades to the mechanical and electrical installations, as a further review of the proposals by JNG Traynor are required by the client, to ascertain what elements of work would be brought forward into the proposal. It would be appropriate to couple the proposed building fabric upgrades with a proposed services upgrade to address defects in a single instance. This can be assessed during the next stage of the project.

5. Further Investigations

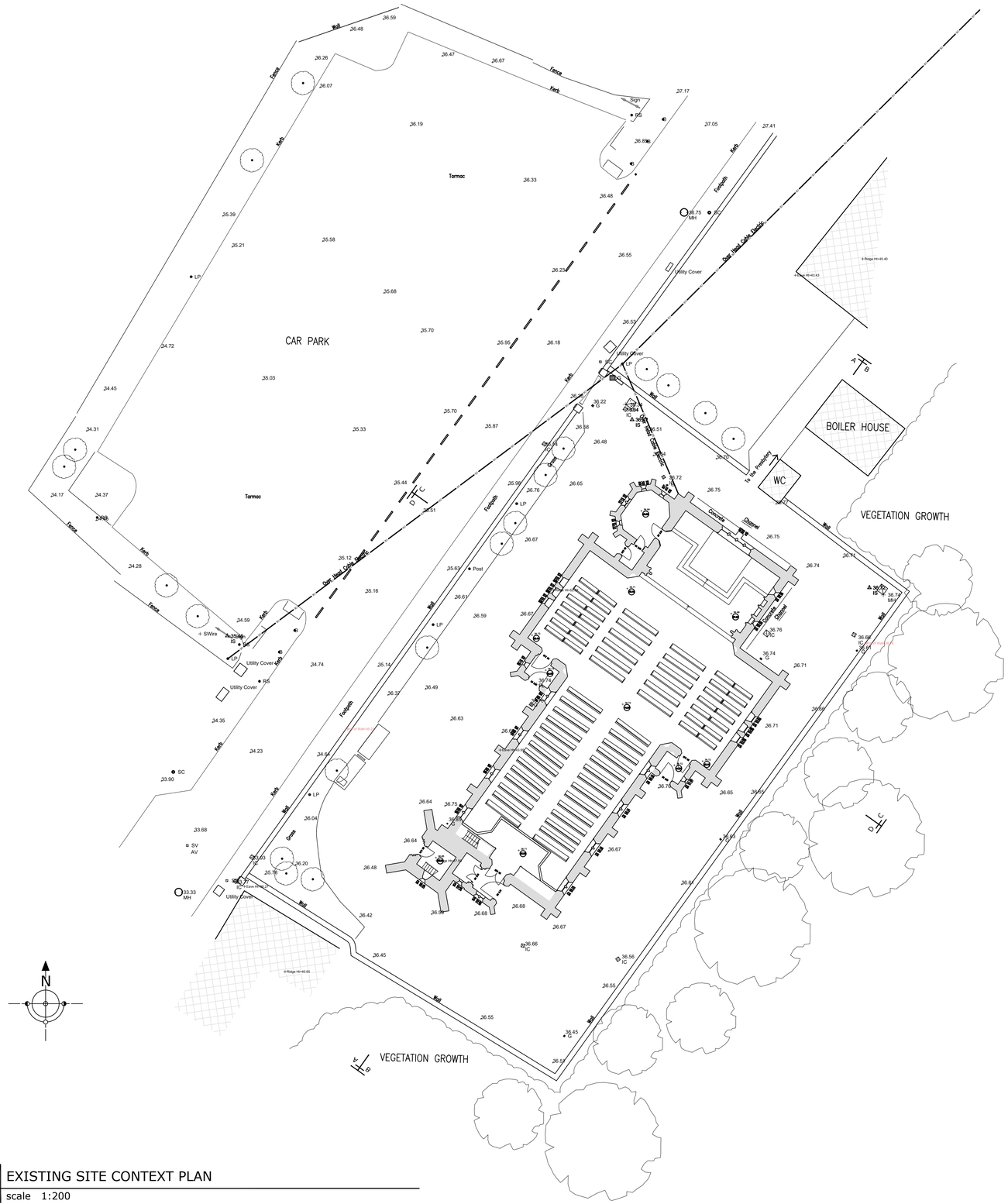
From the condition assessment, the following list is a non-exhaustive list of further investigation works that should be undertaken in the subsequent stages of the project. This list applies to the subject building, rather than to specific isolated areas, floor, or features.

- Carry out an asbestos survey to identify the presence of asbestos containing material.
- Carry out a hazardous materials survey to identify the presence of lead-based paint. Due to the amount of re-decoration works undertaken in more recent decades, lead-based paint could be prevalent throughout.
- Carry out an underground drainage survey to establish the underground drainage system and to identify the condition of same. Pending a review of same, any issues identified can be considered and repair or replacement in part and / or in totality can be assessed. This should be coupled with a routine maintenance action to flush out the entire system of silt and debris to ensure free flow.
- Consider closer inspection / analysis of the existing mortar to establish composition and condition of bedding mortar. Analysis should be undertaken by a specialist such as Dr Jason Bolton or similar.

6. Sources

- The Dublin Builder, Volume 4 – 15 Aug 1893
- 'A Christian Journey, SS Mary & Patrick's Church Avoca' – c.2012
- 'Avoca: A History of the Vale', by Rev. P. Dempsey C.C. - 1912 - https://archive.org/details/avocahistoryofva00demp
- Our Wicklow Heritage - https://wicklowheritage.org/
- Wicklow County Archives
- County Wicklow Heritage – https://heritage.wicklowheritage.org/
- Wicklow News-Letter & County Advertiser
- The Geological Heritage of Wicklow, An audit of County Geological Sites in Wicklow by Robert Meehan, Matthew Parkes, Vincent Gallagher, Ronan Hennessy and Sarah Gatley – 2014
- National Library of Ireland
- The British Newspaper Archive
- Freeman's Journal Newspaper Archive
- "Distribution of driving rain in Ireland", Climatological Note, No.17, Met Eireann, C Mateus & B Coonan - 2022.
- https://craighowells.com/choir/#
- 'Conservation of Historic Buildings', 3rd Edition, ISBN 0750658630
- 'English Heritage Practical Building Conservation Timber', ISBN 13.9780754645542
- 'Timber Decay in Buildings and its Treatment', by Brian Ridout

APPENDIX A – Survey Drawings – Not to scale in report



EXISTING SITE CONTEXT PLAN

scale 1:200

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SCALE
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DATE
August 2023

JOB
Church of St Mary and St Patrick
Avoca
Co. Wicklow

CLIENT
Avoca Parish

TITLE
Existing Site Context Plan

DRAWING NUMBER
18-32-SV-100

REVISION

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EXISTING GROUND FLOOR PLAN

scale 1:75

Legend: Internal Decay Mechanisms

- ▨ Deteriorated Plaster Finish
- ▨ Deteriorated Paint Finish
- ▭ Area of Dry Rot
- ▭ Existing Dry Lining
- ▭ Area of Note

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Avoca Parish

TITLE
Existing Ground Floor Plan

DRAWING NUMBER
18-32-SV-200

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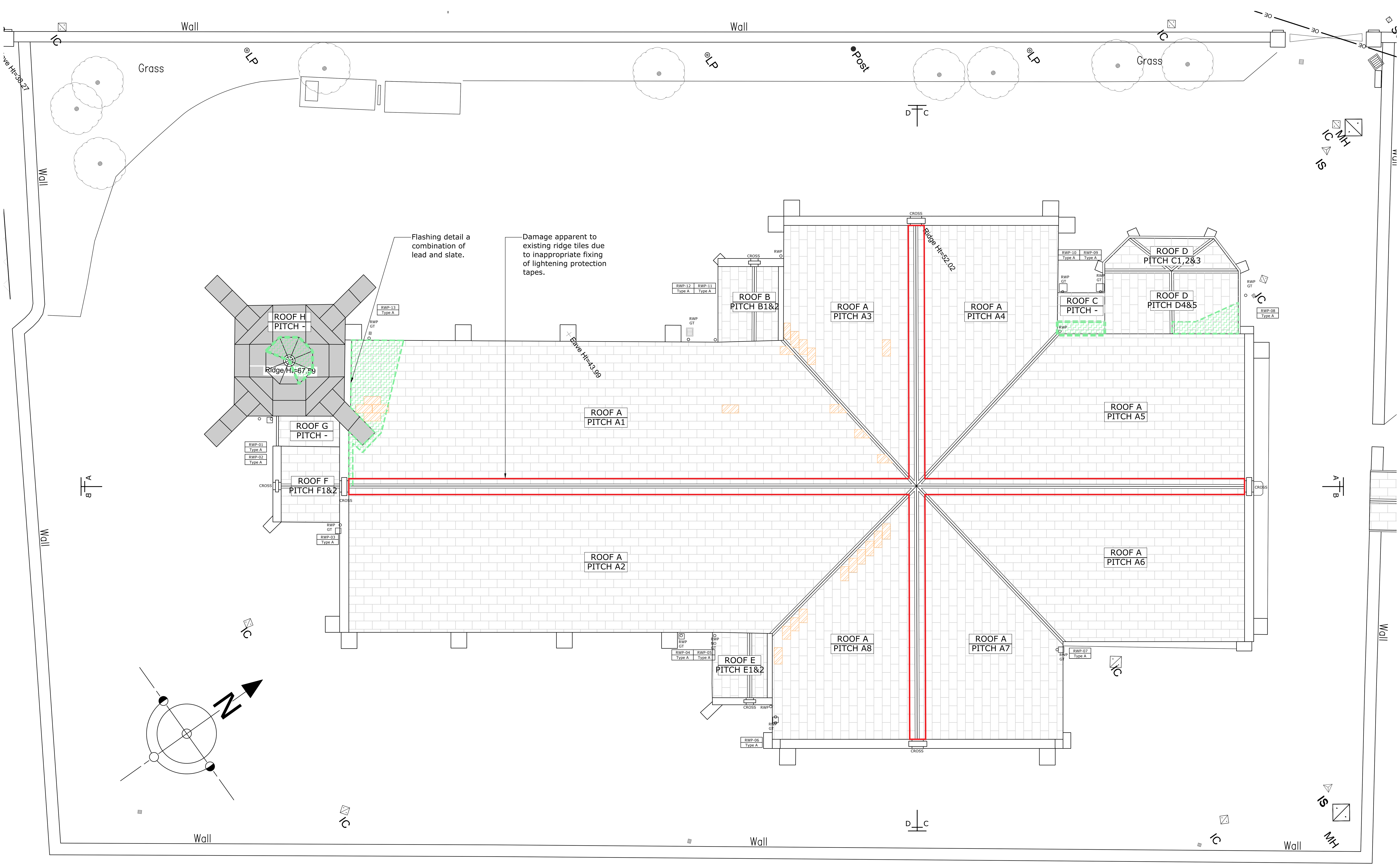

Wall
Grass
LP
Post
IC
MH
IS
D C
A B
Flashing detail a combination of lead and slate.
Damage apparent to existing ridge tiles due to inappropriate fixing of lightening protection tapes.
ROOF H PITCH -
Ridge Ht=67.59
ROOF G PITCH -
ROOF F PITCH F1&2
ROOF B PITCH B1&2
ROOF A PITCH A1
ROOF A PITCH A2
ROOF A PITCH A3
ROOF A PITCH A4
ROOF A PITCH A5
ROOF A PITCH A6
ROOF A PITCH A7
ROOF A PITCH A8
ROOF C PITCH -
ROOF D PITCH C1,2&3
ROOF D PITCH D4&5
ROOF E PITCH E1&2
Ridge Ht=52.02
Eave Ht=43.99
N

EXISTING ROOF PLAN

scale 1:75

Legend: Roof Decay Mechanisms

- Biological Growth: Vegetation / Algae
- Slipped Slates
- Area of Note

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SCALE 1:75@A1

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Avoca
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CLIENT Avoca Parish

TITLE Existing Roof Plan

DRAWING NUMBER 18-32-SV-201

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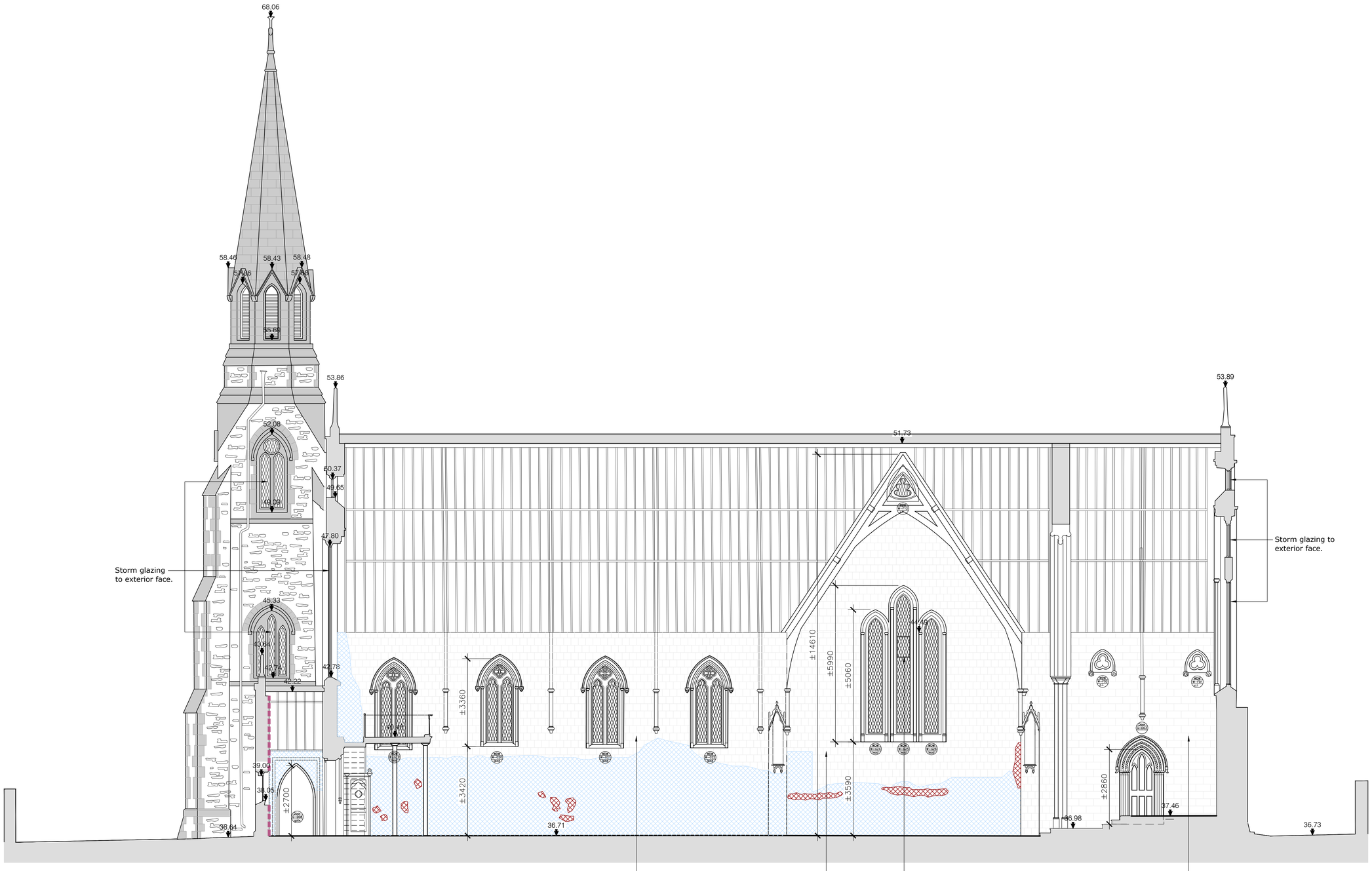

EXISTING LONG SECTION A-A (LOOKING WEST)

scale 1:75

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SCALE
1:75@A1

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JOB
Church of St Mary and St Patrick
Avoca
Co. Wicklow

CLIENT
Avoca Parish

TITLE
Existing Section A-A

DRAWING NUMBER
18-32-SV-300

REVISION

Legend: Internal Decay Mechanisms
- Deteriorated Plaster Finish
- Deteriorated Paint Finish
- Area of Dry Rot
- Existing Dry Lining
- Area of Note

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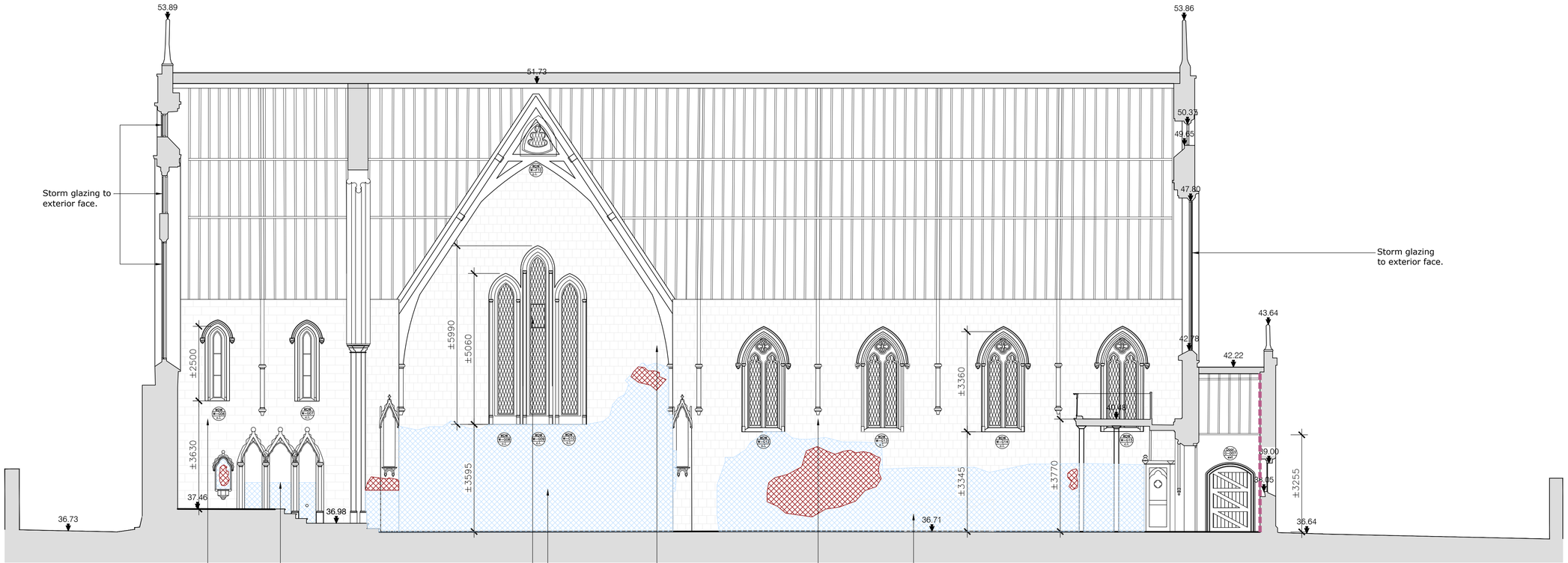

EXISTING LONG SECTION B-B (LOOKING EAST)

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August 2023

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Church of St Mary and St Patrick
Avoca
Co. Wicklow

CLIENT
Avoca Parish

TITLE
Existing Section B-B

DRAWING NUMBER
18-32-SV-301

REVISION

Legend: Internal Decay Mechanisms
- Deteriorated Plaster Finish
- Deteriorated Paint Finish
- Area of Dry Rot
- Existing Dry Lining
- Area of Note

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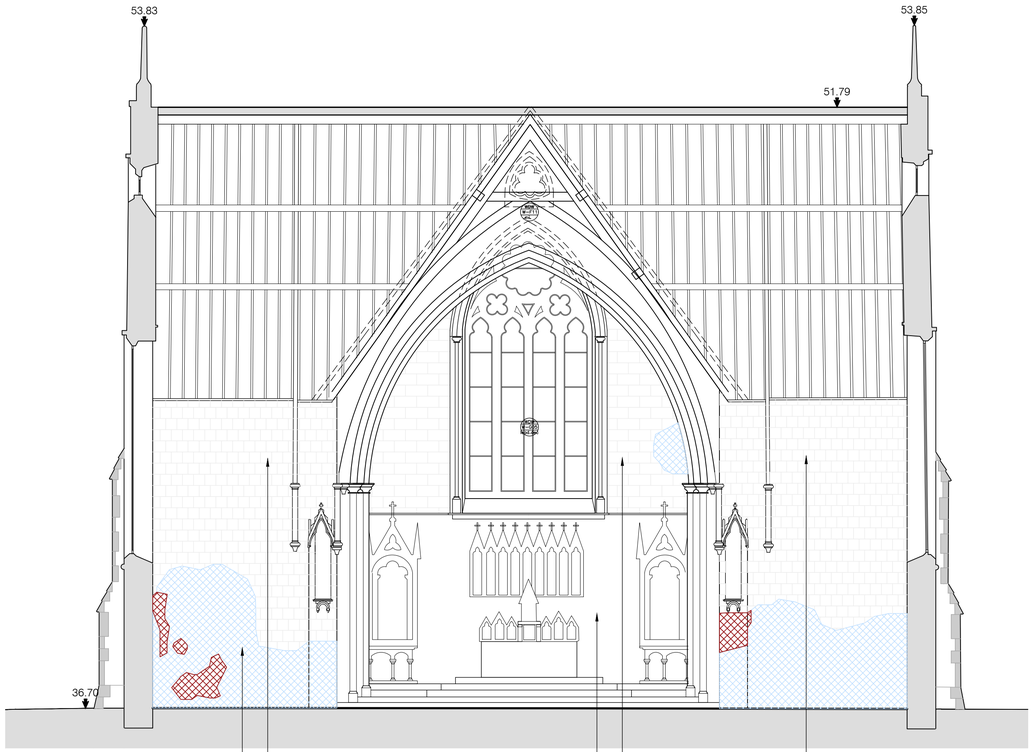
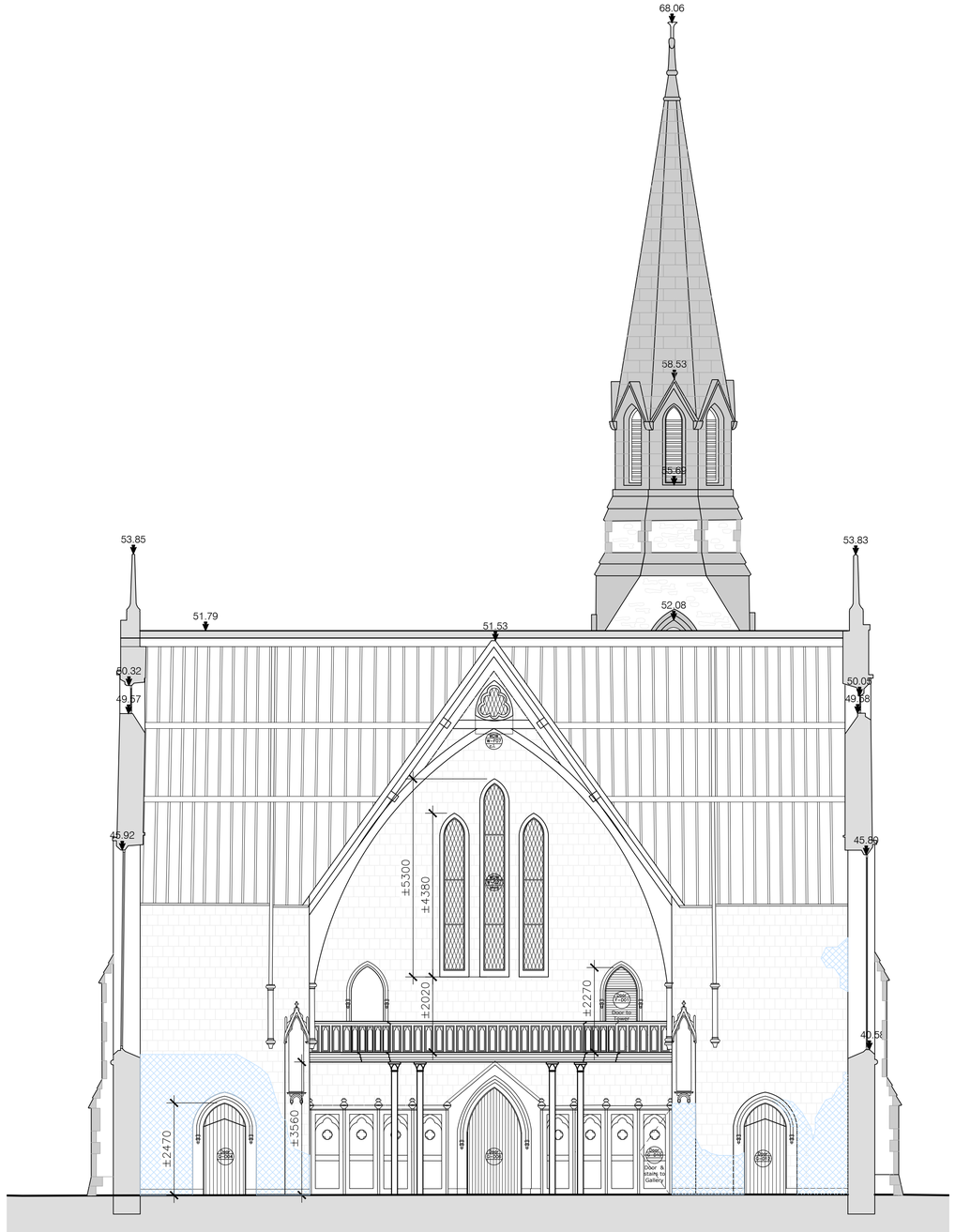


EXISTING CROSS SECTION C-C TOWARD SANCTUARY

scale 1:75



EXISTING CROSS SECTION D-D TOWARD REAR

scale 1:75

Legend: Internal Decay Mechanisms

- Deteriorated Plaster Finish
- Deteriorated Paint Finish
- Area of Dry Rot
- Existing Dry Lining
- Area of Note

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CAD FILE REF.
18-32/DRAWING/SURVEY

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August 2023

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Avoca
Co. Wicklow

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Avoca Parish

TITLE
Existing Sections C-C & D-D

DRAWING NUMBER
18-32-SV-302

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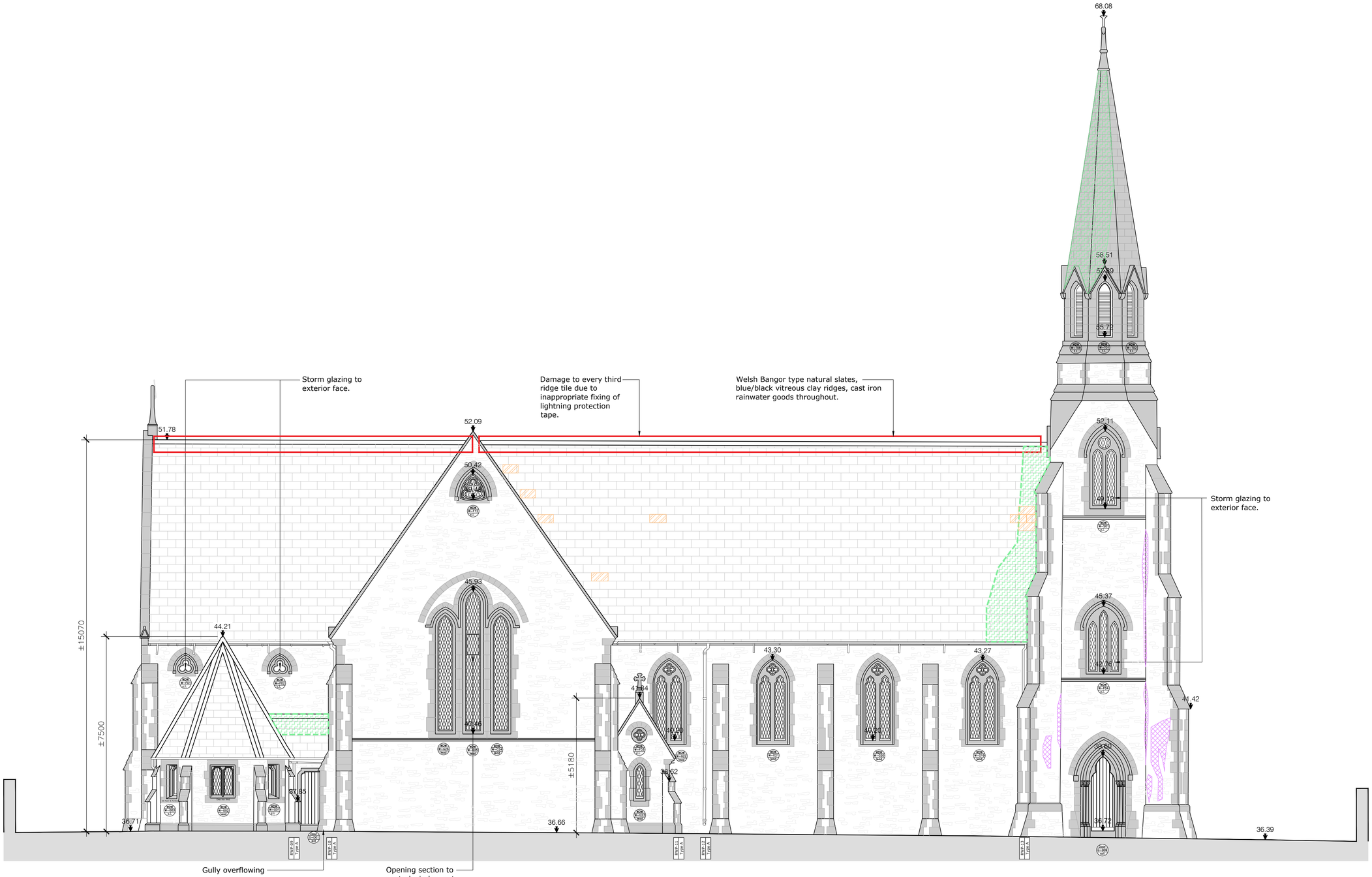

EXISTING WEST ELEVATION (FRONT)

scale 1:75

Façade Materials Legend: Stone Types

- Ashlar Granite
- Greywacke Sandstone
- Concrete Plinth

Façade Legend: Decay Mechanisms

- Biological Growth: Vegetation / Algae
- Lime Leaching to Masonry
- Slipped Slates
- Area of Note

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SCALE
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CHECKED AD

DATE
August 2023

JOB
Church of St Mary and St Patrick
Avoca
Co. Wicklow

CLIENT
Avoca Parish

TITLE
Existing West Elevation

DRAWING NUMBER
18-32-SV-400

REVISION

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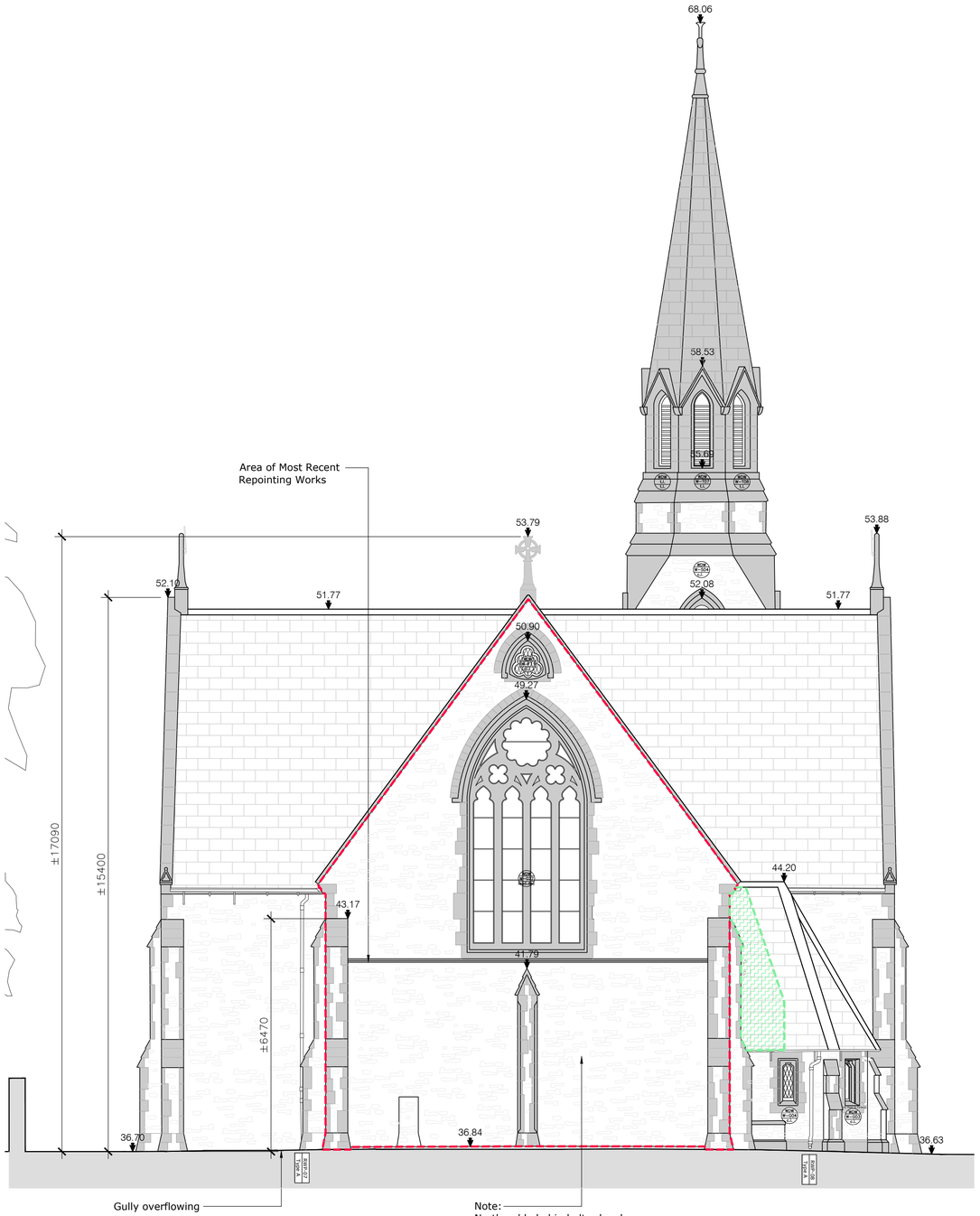

EXISTING NORTH ELEVATION

scale 1:75

EXISTING SOUTH ELEVATION

scale 1:75

Façade Materials Legend: Stone Types

- Ashlar Granite
- Greywacke Sandstone
- Concrete Plinth

Façade Legend: Decay Mechanisms

- Biological Growth: Vegetation / Algae
- Lime Leaching to Masonry
- Slipped Slates
- Area of Note

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Avoca
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TITLE
Existing North & South Elevations

DRAWING NUMBER
18-32-SV-401

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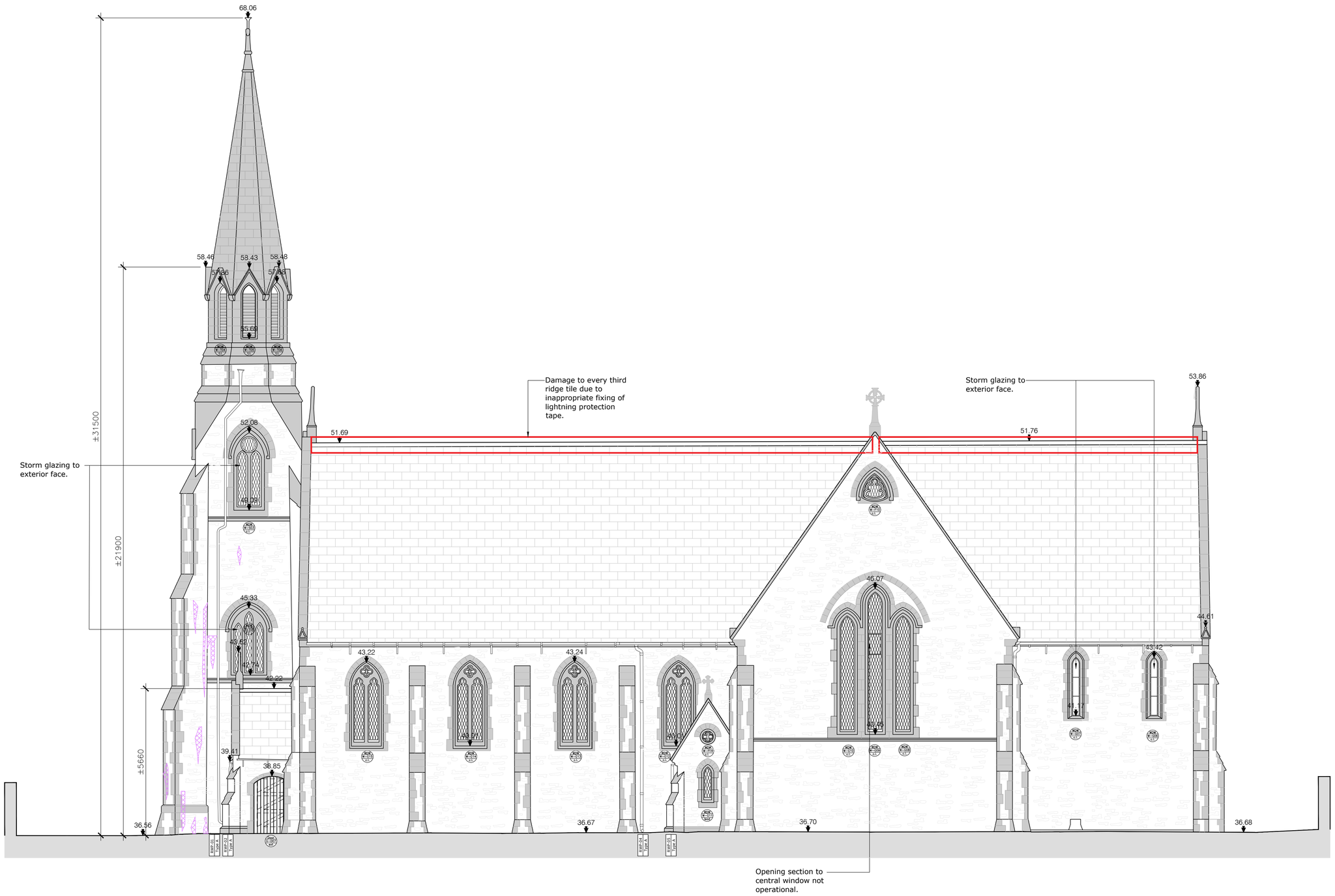

EXISTING EAST ELEVATION

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Avoca
Co. Wicklow

CLIENT
Avoca Parish

TITLE
Existing East Elevation

DRAWING NUMBER
18-32-SV-402

REVISION

Façade Materials Legend: Stone Types
- Ashlar Granite
- Greywacke Sandstone
- Concrete Plinth

Façade Legend: Decay Mechanisms
- Biological Growth: Vegetation / Algae
- Lime Leaching to Masonry
- Slipped Slates
- Area of Note

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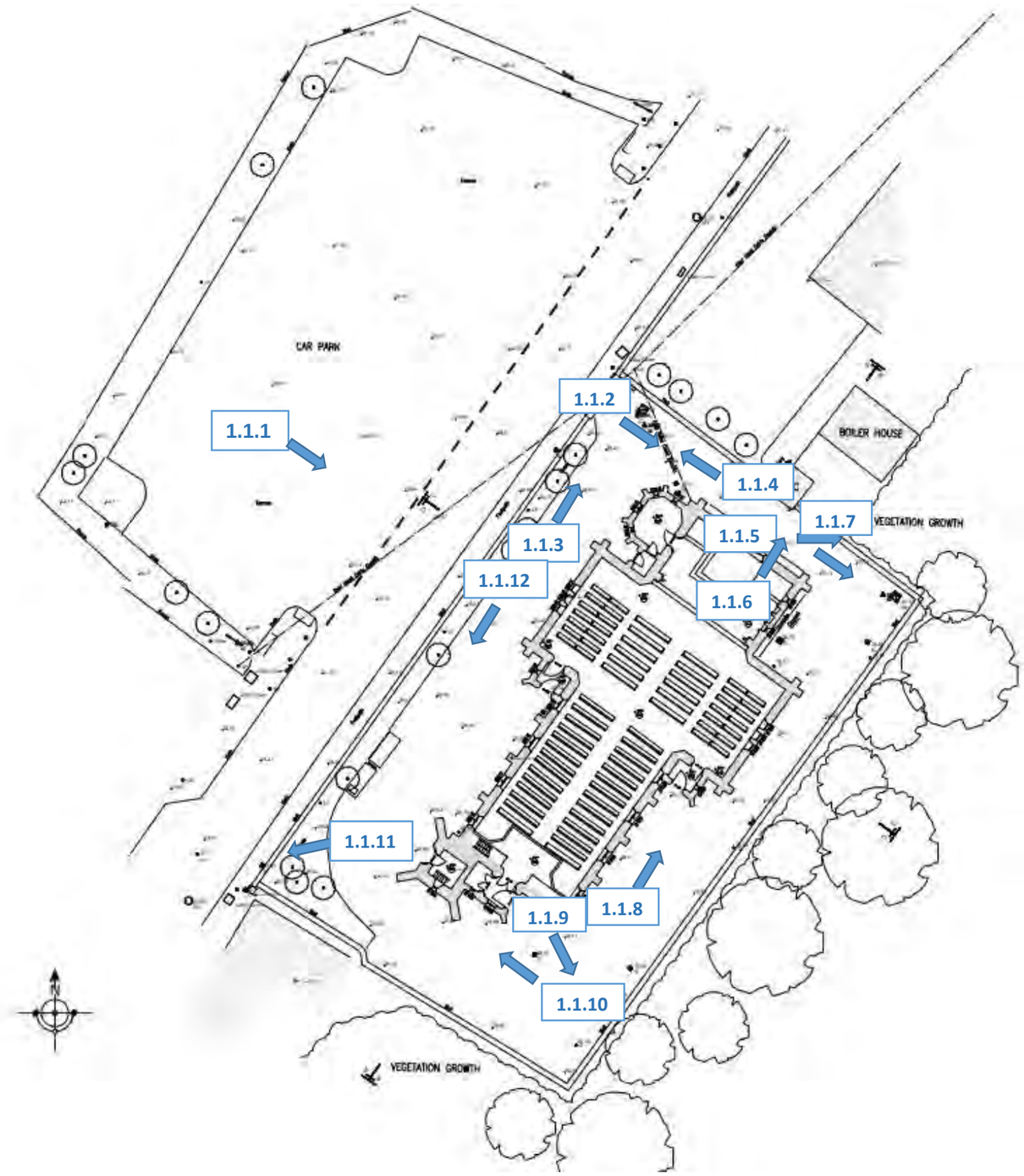
APPENDIX B – Condition Survey Report of Exterior Building Fabric

Appendix B - Condition Survey Report of Exterior Building Fabric

Note: Photographs from the 26th of July and 23rd of August 2023

1.1 Site Location Map



1.1 Site Context – Boundaries

1.1.1

View east along the Main St in Avoca of the West (front) elevation. Note steep incline to east which is heavily forested.

1.1.2

Site boundary wall to north end of church, boundary wall adjoining presbytery. Tarmac surface throughout.

1.1.3

Plaques dedicated to Deceased members of Fr. Murphy Branch Avoca and The Avoca Miners set into the north boundary wall.

1.1.4

Entrance gates and boundary wall to the north west of the site. Tarmac surface throughout.

1.1.5

Steps to the Parochial House and parishoner WC to the north boundary wall.

1.1.6

Parishoner WC accessible from north side of site.

1.1.7

Boundary wall, north east corner of the site. Heavily forested area beyond boundary wall.

1.1.8

East boundary wall. Steep incline beyond boundary which is heavily forested. Tarmac surface throughout with algae growth.

1.1.9

South-east corner of boundary wall. Tarmac surfacew throughout with aglae growth due to ponding water in this location.

1.1.10

South boundary wall. Heavy vegetation growth.

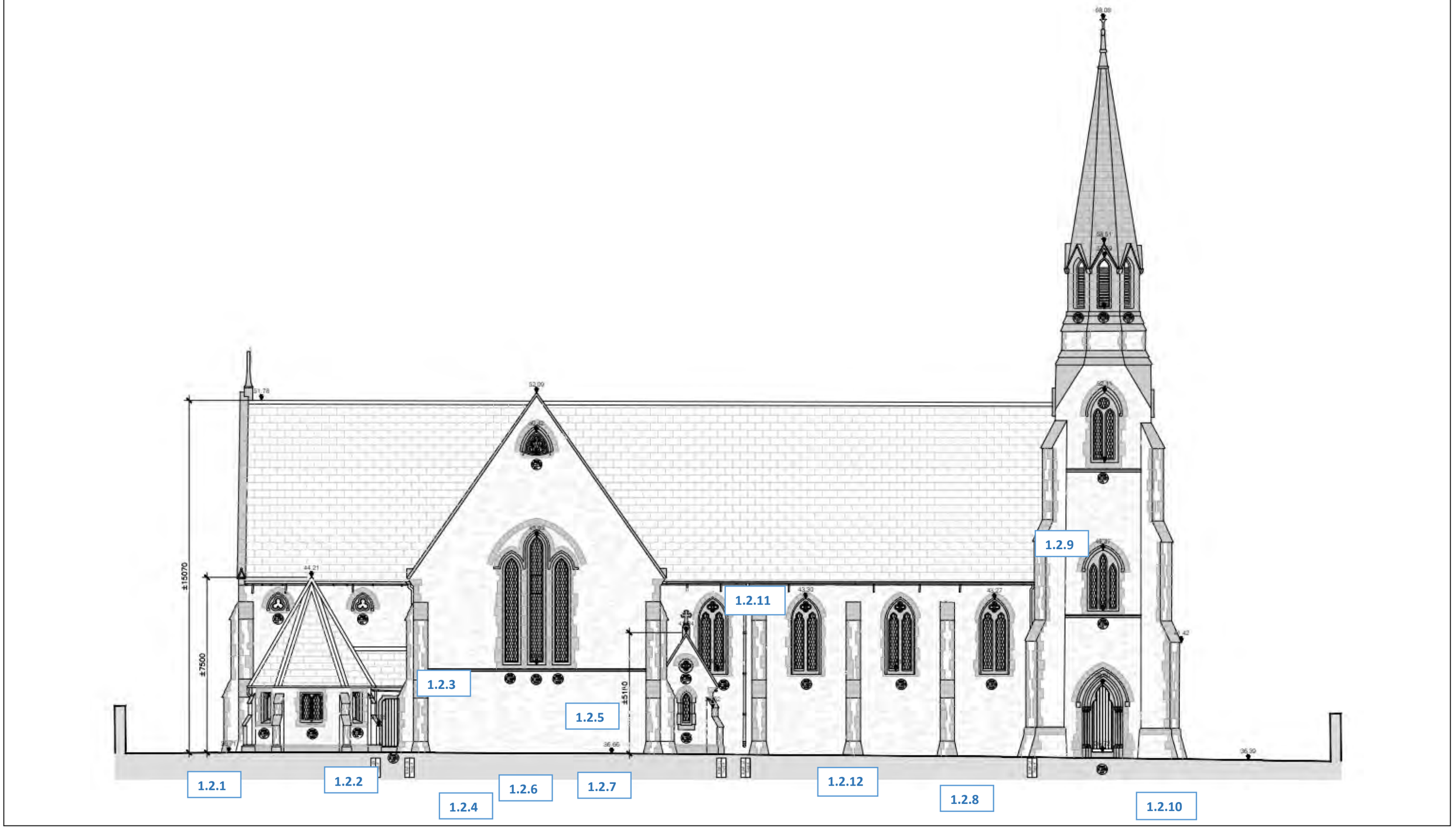
1.1.11

South-west boundary wall, adjoining property beyond.

1.1.12

West boundary along Main Street, bounded by railings.

1.2 Existing West (Front) Elevation



1.2 Existing West (Front) Elevation

1.2.1

Northern edge of site. Overhead power cables from Main Street connecting to Church.

1.2.2

Sacristy view. Dedication 'Erected 1862' & 'SS. Mary & Patrick' carved into the stonework below the window cill, most likely more recent addition. Slated pyramidal roof.

1.2.3

Entrance to sacisty. Note rainwater downpipe arrangement. Significant water ingress noted to the interior in this location due to failing roof covering and poor functioning rainwater goods.

1.2.4

West transept; view left hand side. Heavy staining and cementitious pointing to stone throughout.

1.2.5

West transept; view centrally. Window has opening section which is non-operational. Heavy staining to below band.

1.2.6

West transept; view right hand side. Heavy staining and cementitious pointing to stone throughout.

1.2.7

North west entrance porch used as primary entrance. Heavy staining.

1.2.8

West Nave wall. Windows W-G19 to W-G22.

1.2.9

West Nave Wall. Window W-G19 & vegetation to roof at abutment with belltower. Slate and lead flashing detail.

1.2.10

West elevation of Belltower. Heavy staining and lime leaching. Repointing works to the tower granite door detail G-D09.

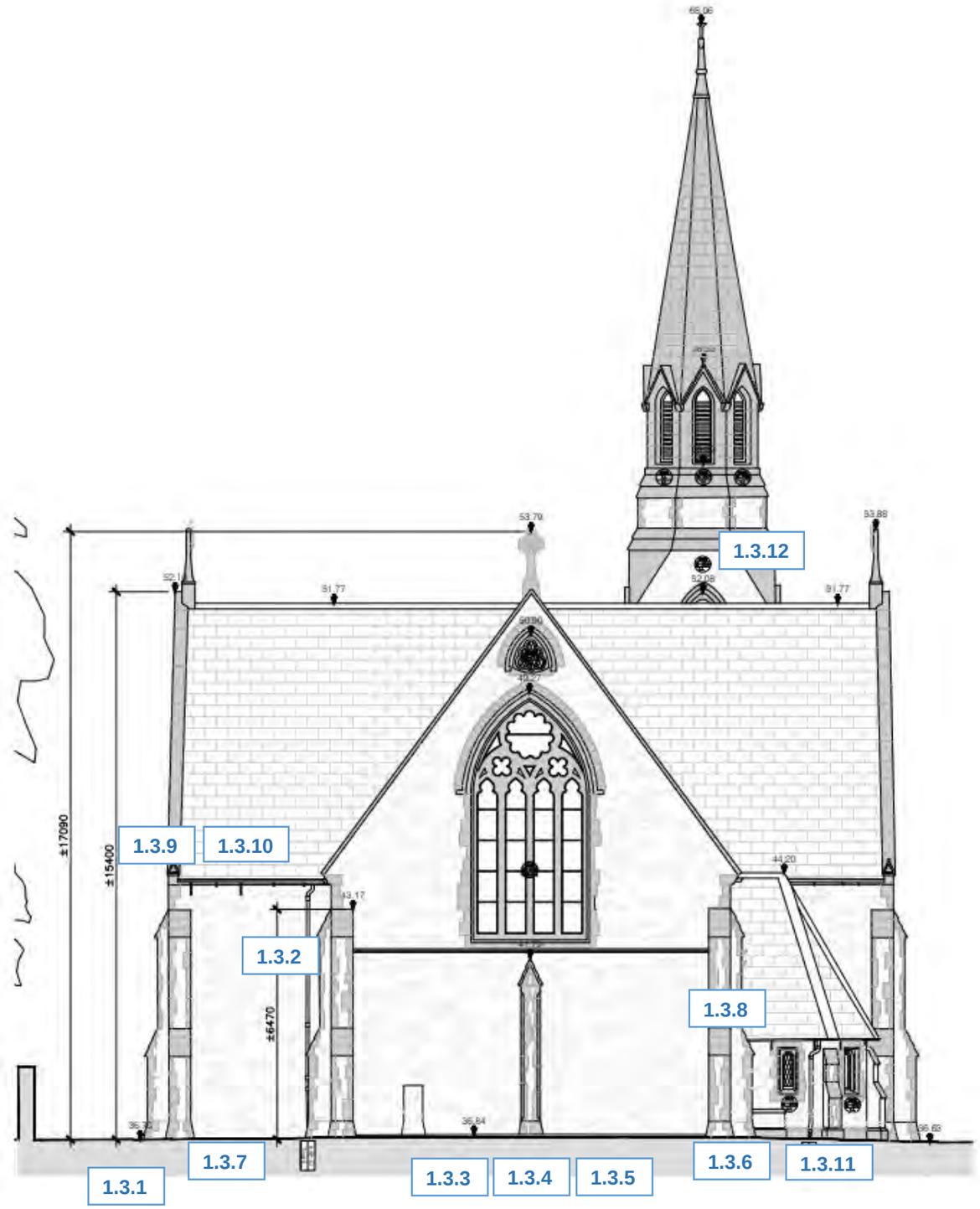
1.2.11

Valley gutter and roof B, pitch B2, to north west entrance porch. Gutter in poor condition corresponding with deteriorated fabric internally.

1.2.12

Algae growth around rainwater gulley to RWP-12. Staining to stone.

1.3 Existing North (Side) Elevation



1.3 Existing North (Side) Elevation

1.3.1

East transept; north elevation. Tarmac surface throughout with small concrete plinth to east wall of Altar.

1.3.2

North elevation behind Altar; left hand side. This elevation has been re-pointed circa. 2010, perhaps in two phases, upper and lower.

1.3.3

North elevation behind Altar: central. Façade re-pointed. Stained glass window with secondary storm glazing externally.

1.3.4

North elevation behind Altar: central. Façade re-pointed.

1.3.5

North elevation behind Altar: right hand side. Façade re-pointed. Staining at low level likely due to rising damp.

1.3.6

Sacristy, windows W-G04. Rainwater goods in this location are poor functioning.

1.3.7

Algae growth around rainwater gulley to RWP-07. Gully overflowing.

1.3.8

Algae growth to Roof D, pitch D5 along east wall. Staining to stone. Electrical incoming supply seen to buttress entering sacristy.

1.3.9

High level roof, north-east end. Slatework, cast iron gutter & brackets and capping detail to wall Roof A, pitch A7.

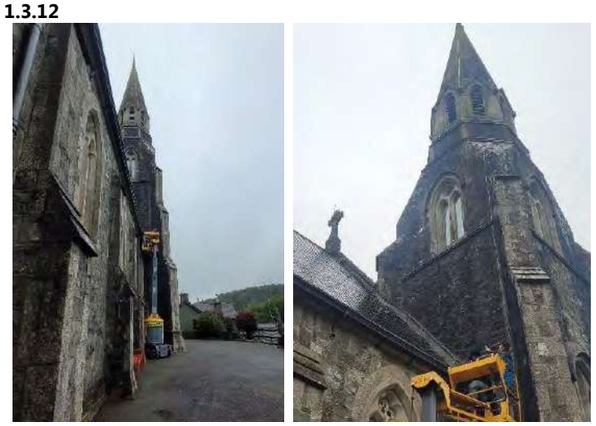
1.3.10

Rainwater pipe RWP-07. Algae growth apparent to high-level stone band supporting gutter.

1.3.11

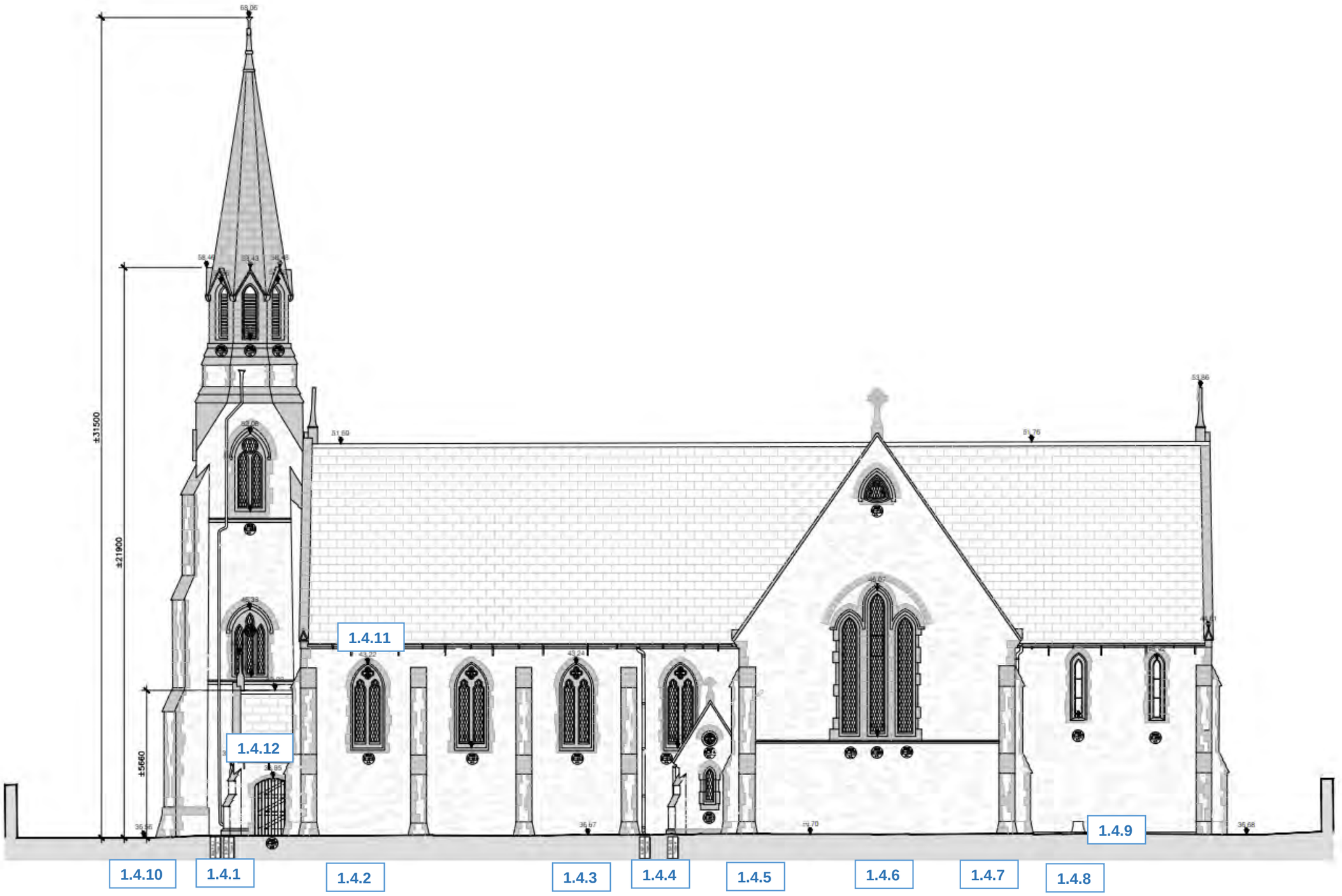
Rainwater pipe RWP-10 in poor condition with overflowing gulley. North elevation along west transept with entrance door to sacristy.

1.3.12



North elevation of the bell tower. Heavy staining and localised lime leaching to stone. Secondary storm glazing to windows.

1.4 Existing East (Rear) Elevation



1.4 Existing East (Rear) Elevation

1.4.1


Bell tower view east. Entrance via south porch. Staining and lime leaching to stone. Extended rainwater pipe to top of tower. Secondary storm glass to bell tower windows.

1.4.2

Windows W-G15 & W-G16. Broken section of gutter observed in July, temporary repair in place in August. Tarmac surface throughout.

1.4.3

Windows W-G12 & W-G13. Entrance to north east porch. Tarmac surface throughout which has algae staining due to water ponding.

1.4.4

Window W-G11 north east porch. Tarmac surface throughout.

1.4.5

East transept; left hand side. Heavy staining and cementitious pointing to stone.

1.4.6

East transept; view centrally. Heavy staining and cementitious pointing to stone. Openable section of window not operational.

1.4.7

East transept; right hand side. Heavy staining and cementitious pointing to stone.

1.4.8

East wall of Alter. Windows W-G07 & W-G06 at high level. Heavy algae growth to ground surface due to water ponding.

1.4.9


Concrete plinth at base of the wall with a wall nib, prossible service area. Base of wall, lower courses, appears to be re-pointed recently.

1.4.10

Lime leaching to snecked rubble stone at bell tower on east elevation. Gulleys overflowing and algae growth to tarmac surface.

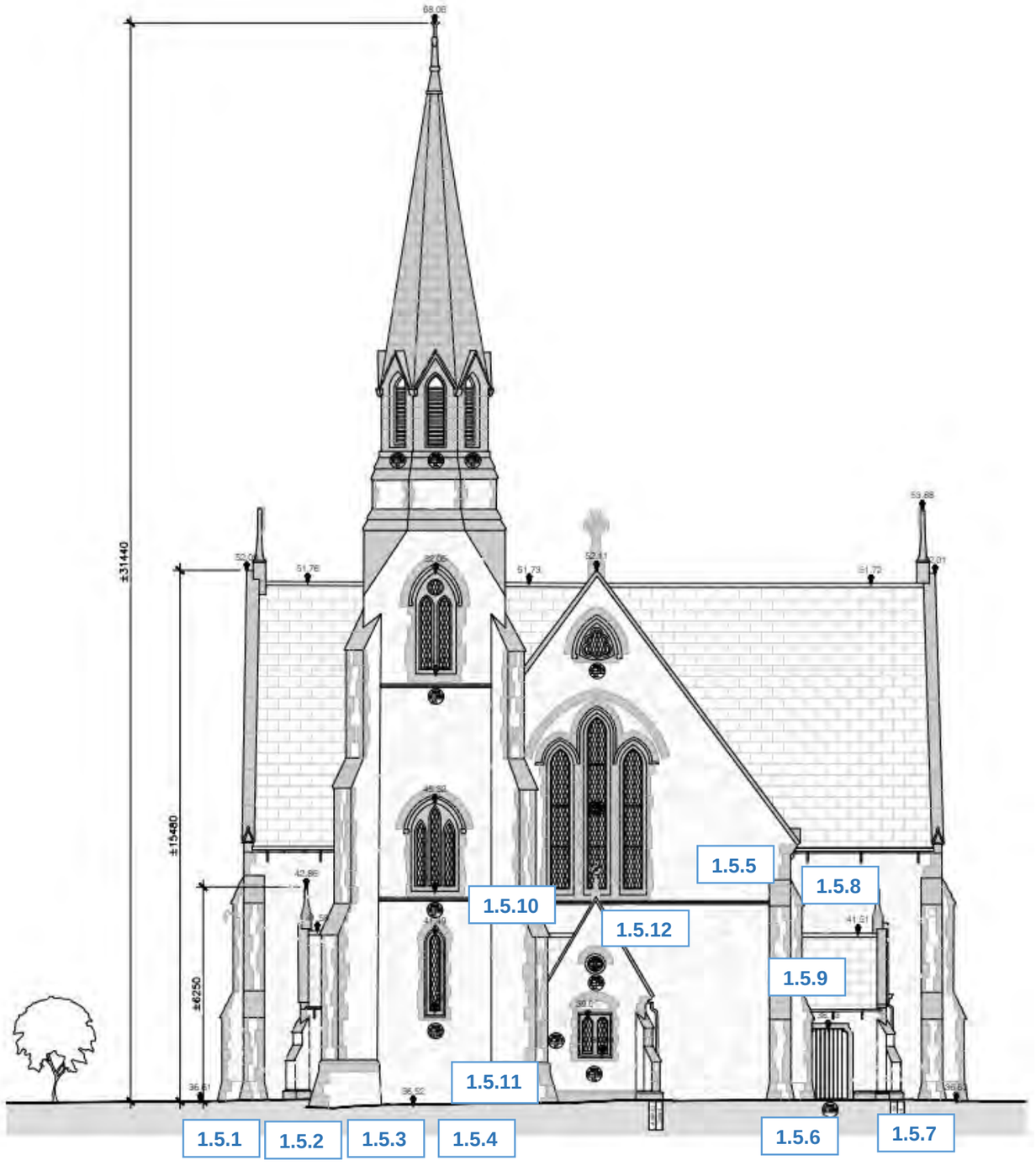
1.4.11

Broken section of cast iron gutter above window W-G15 seen in July and temporary repair in place in August. Broken due to falling ridge tile which damaged gutter.

1.4.12

South elevation. Roof F, pitch F2. Note vegatation growth to window W-G27 and secondary storm glazing to exterior face. Lead flashing minimal to roof junction.

1.5 Existing South (Side) Elevation



1.5 Existing South (Side) Elevation

1.5.1

North west entrance porch presently main entrance; view south of west transept. Few slipped slates noted to high level roof.

1.5.2

Bell tower; south elevation. Heavy staining and lime leaching to stone. Tarmac surface throughout.

1.5.3

Bell tower; south elevation; central view. Secondary storm glazing to windows. Lime leaching to stone.

1.5.4

Bell tower & south elevation; Heavy staining and lime leaching to stone. Secondary storm glazing to

1.5.5

South elevation. Tarmac surface throughout in poor condition. Granite stone coping stone detail.

1.5.6

North east entrance porch; view south of east transept. Tarmac surface throughout with algae growth.

1.5.7

North east entrance porch. Heavy staining to stone.

1.5.8

South pitch of East Transept Roof. Roof A, pitch A8 and Roof E, pitch E1 (to entrance lobby). Some localised slipped slates.

1.5.9

Valley gutter and roof E, pitch E2, to north east entrance porch in poor condition.

1.5.10

Roof G to the south porch in poor condition; broken and slipped slates, algae growth, minimal lead flashing against stone wall.

1.5.11

RWP-01 and RWP-02 to the bell tower and Roof G. Cast iron gutter blocked and causing staining to slated roof.

1.5.12

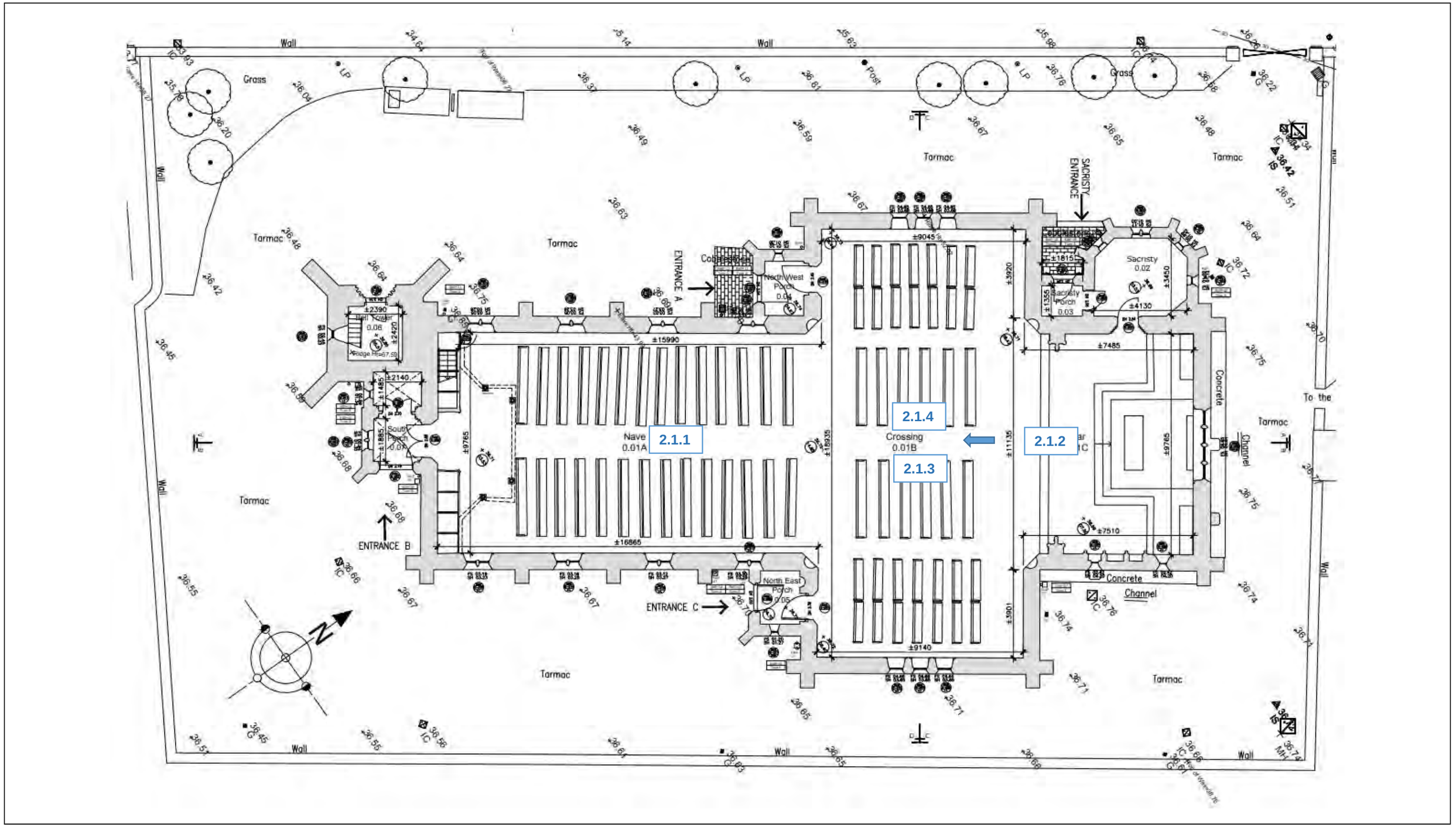
Granite coping stone and detail to Roof F, pitch F1 with minimum lead flashing detail. Secondary storm glass to windows.

APPENDIX C – Condition Survey Report of Interior Building Fabric

Appendix C - Condition Survey Report of Interior Building Fabric

Note: Photographs from the 26th of July and 23rd of August 2023

2.1 Ground Floor Plan



2.1 Ground Floor Plan – Main Interior of the Church

2.1.1

View north towards the alter down the main aisle. Timber roof over and tiled floor to central aisle with carpet floor to pews.

2.1.2

View south towards the choir balcony. Timber roof structure over with steel supports.

2.1.3

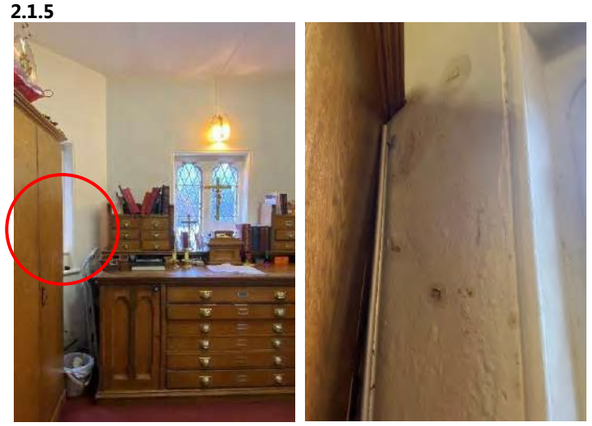
South east view of central timber roof structure, modern steel ties throughout. Painted with dark colour and gold features to trusses.

2.1.4

Floor finish to central aisle viewed from the choir balcony with carpet finish to pews.

2.1 Ground Floor Plan – Sacristy (Room 0.02)

2.1.5



View towards west wall of the sacristy. Note brown patches of damp showing through repainting works.

2.1.6

View towards north wall of the sacristy, below window WDW-G03 patches of previously repaired boasted plasterwork. Note ESB meter.

2.1.7

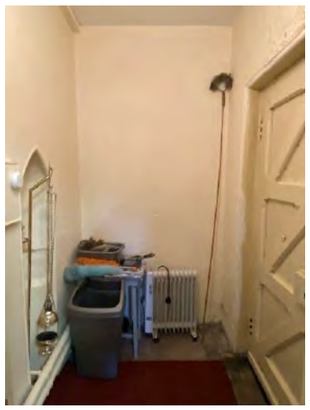
View east to door G-D03. 6no. panelled door with decorative moulding. Paintwork in poor condition**.**

2.1.8

View south east towards door G-D02. Section of active dry rot visable at high level. Staining to wall and ceiling in this location.

2.1 Ground Floor Plan – Sacristy Porch (Room 0.03)

2.1.9



View south in entrance lobby to sacristy.

2.1.10

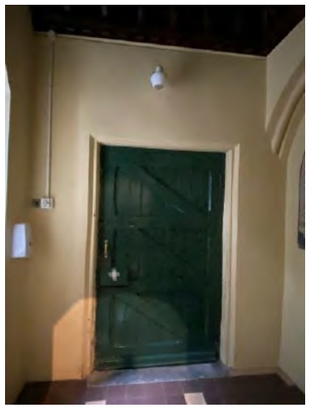
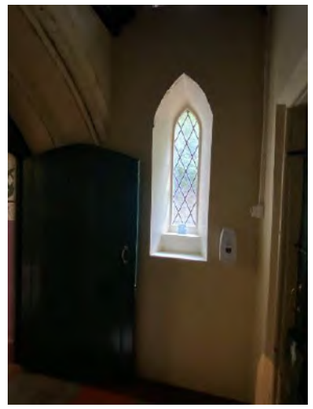
View west to external entrance door. Active dry-rot and damp to wall and ceiling. Plaster finish in very poor condition.

2.1.11

View north towards door G-D02 leading to sacristy. Active dry-rot and damp to wall and ceiling. Plaster finish in very poor condition.

2.1.12

Section of active dry rot and damp to the left hand side full height. Corresponding with defects at roof and rising damp.

2.1 Ground Floor Plan – North East Porch (Room 0.04)			
2.1.17  View north east towards door G-D12. Base of door and reveal showing signs of damp due to water ingress.	**2.1.18**  View east including external door G-D11. Possible dry lining to this external wall which is unvented.	**2.1.19**  Ceiling view of timber structure, painted dark.	**2.1.20**  View north west to left hand side of door G-D12. Paint and plaster finishes deteriorated, corresponding with defect to gutter over.
2.1 Ground Floor Plan – North West Porch (Room 0.05)			
2.1.21  View south towards external door G-D05. Dry lining to this area. Base of door and reveal show sign of damp.	**2.1.22**  View towards west wall.	**2.1.23**  View north west including door D-G04. Paint and plaster finishes deteriorated, corrosion of metal beading apparent to head of door.	**2.1.24**  View east, windows W-G11. Possible dry lining to this external wall which is unvented. Corrosion of metal beading apparent to window.

2.1 Ground Floor Plan – Bell Tower (Room 0.06)

2.1.25

View east through external door G-D09. Note ground floor level used as storage.

2.1.26

View south towards window W-G18. Significant staining (pink and brown) and efflorescence to wall consistent with algae presence.

2.1.27

View north towards internal wall adjoining Nave. Storage shelving at ground floor level.

2.1.28

View south including window W-F05 at first floor level. Significant staining and efflorescence to wall consistent with algae presence.

2.1.29

View west including window W-F04 at first floor level. Note bottom right section which appears openable, is not functional due to secondary storm glazing to exterior.

2.1.30

View north west including stairs to second floor level. Significant staining (vibrant green) and efflorescence to walls consistent with algae presence.

2.1.31

View of north wall, adjoining Nave, towards internal door F-D01 to choir balcony. Significant staining (vibrant green) to walls. Gypsum plaster finish to head of ope to the balcony door.

2.1.32

View to ceiling. No safe access to upper levels. Significant staining extents to full height of walls. Timber stair in this location rotten and decayed by wood-destroying insect.

2.1 Ground Floor Plan – South Porch (Room 0.07)

2.1.33

View south east towards external door G-D07. Base of door and reveal show signs of damp.

2.1.34

View west towards gate to original baptistry. Possible dry lining to this external wall which is unvented.

2.1.35

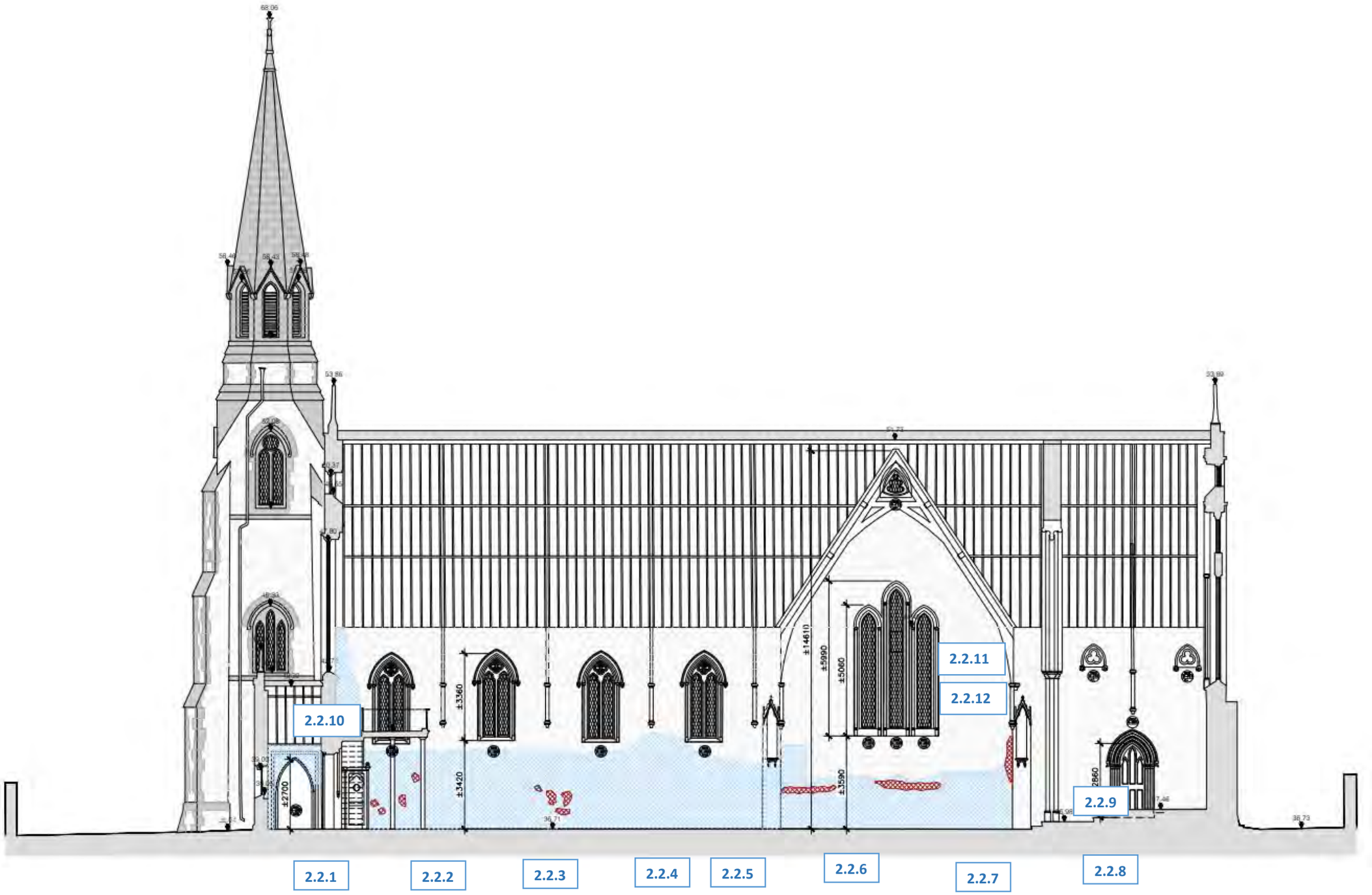
View south of window W-G17, boasted plaster to left hand side and poor paint finish. Possible dry lining to this external wall.

2.1.36

Ceiling and floor finish to south entrance lobby.

2.2 Existing Section A-A (View West)

Note: Area of blue & red hatch indicates deteriorated plaster finish.



2.2 Existing Section A-A (View West)
NOTE; Photographs taken from lhs-rhs

2.2.1

View south west, window W-G19. Note boasted plaster below cill level.

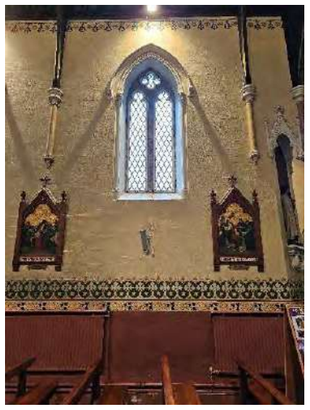
2.2.2

Window W-G20. Note boasted plaster below cill level. Fixed window.

2.2.3

Window W-G21. Note boasted plaster below cill level. Fixed window.

2.2.4



Window W-G21. Note boasted plaster below cill level. Fixed window.

2.2.5

View of corner intersection between windows W-G21 and door G-D12 featuring a high level statue niche, boasted plaster below.

2.2.6

View centrally of west transept including windows W-G24-26. Note boasted plaster below cill level. Opening section to central window, not operational.

2.2.7

View of corner intersection between west transept and alter area. Windows, featuring a high level statue niche, boasted plaster below.

2.2.8

View of door G-D03 to the sacristy, including high level windows W-FO1-02. Plaster finish in this area has a lined-and-ruled finish which differs from the other areas of the church.

2.2.9

Decorative plasterwork surround detail to door G-DO3 to the sacristy.

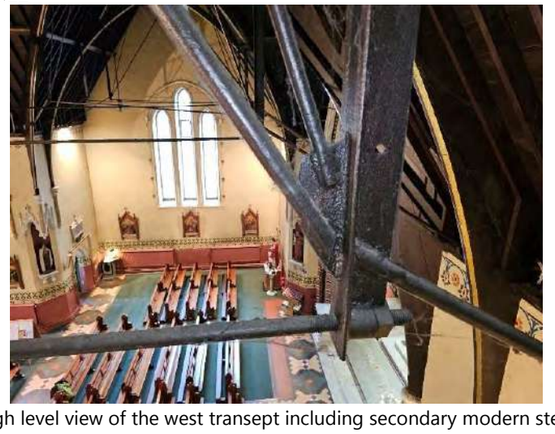
2.2.10

View from the choir balcony to the south of windows W-G20-22, all fixed windows.

2.2.11

High level view from the east transept including timber roof structure with secondary steel roof ties visible.

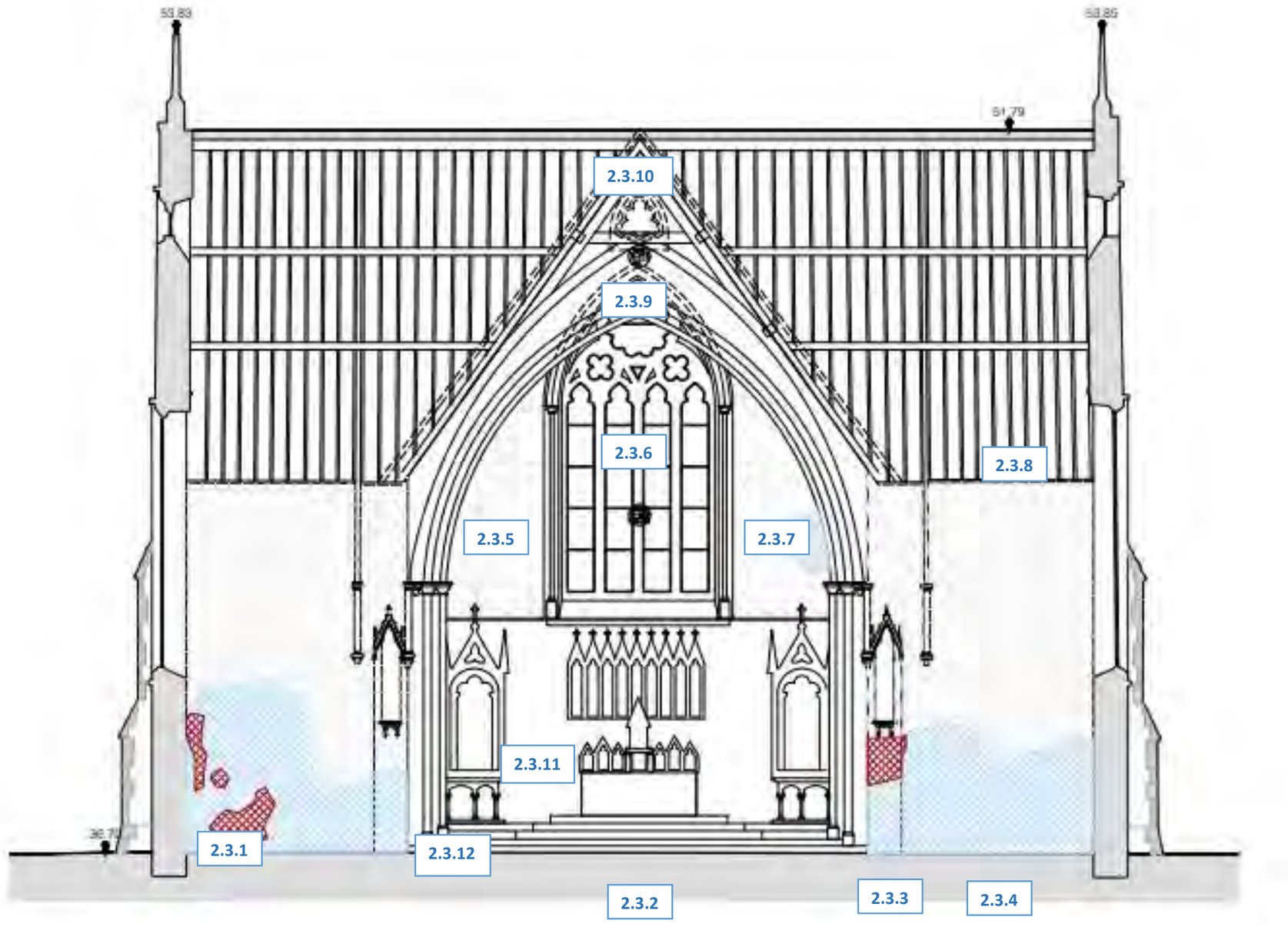
2.2.12



High level view of the west transept including secondary modern steel roof ties.

2.3 Existing Section C-C (View North towards the Santuary)

Note: Area of blue and red hatch indicates deteriorated plaster finish.



2.3 Existing Section C-C (View North towards the Sanctuary)

2.3.1


North wall view of the west transept in poor condition. Missing paintwork and boasted plaster. Areas has been partially replastered.

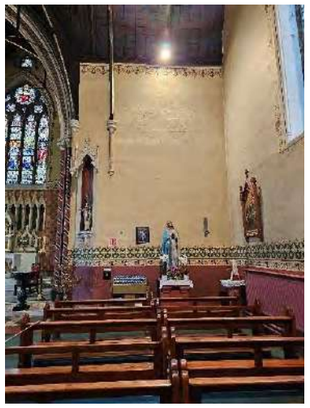
2.3.2

View north of the 3no. steps to the alter and stained-glass window W-G05. Lined-and-ruled plaster finish at high level.

2.3.3


Corner junction between the alter area and the north wall of the east transept in poor condition. Cracking and boast plasterwork.

2.3.4



North wall view of the east transept in poor condition. Area appears to have been partially replastered.

2.3.5

High level view of the alter lhs. Condition of stained glass window not assessed.

2.3.6

High level view of the alter.

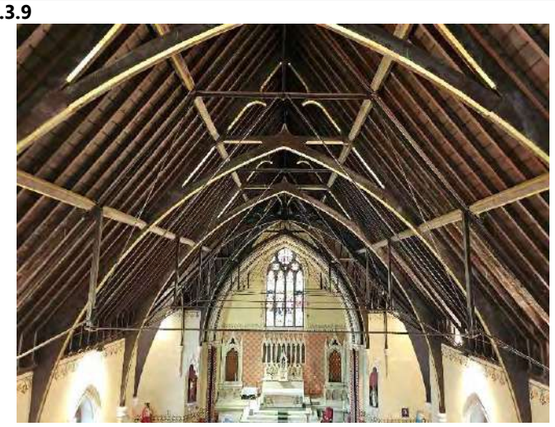
2.3.7

High level view of the alter rhs. Small localised area of boasted plasterwork at high level. Lined-and-ruled plaster finish.

2.3.8

View of the timber roof structure to the east transept.

2.3.9



View from the choir balcony of the timber roof trusses including gold leaf decoration to trusses.

2.3.10

View of the decoration to the arch above the alter area including and M&P referencing SS Mary & Patrick's Church.

2.3.11

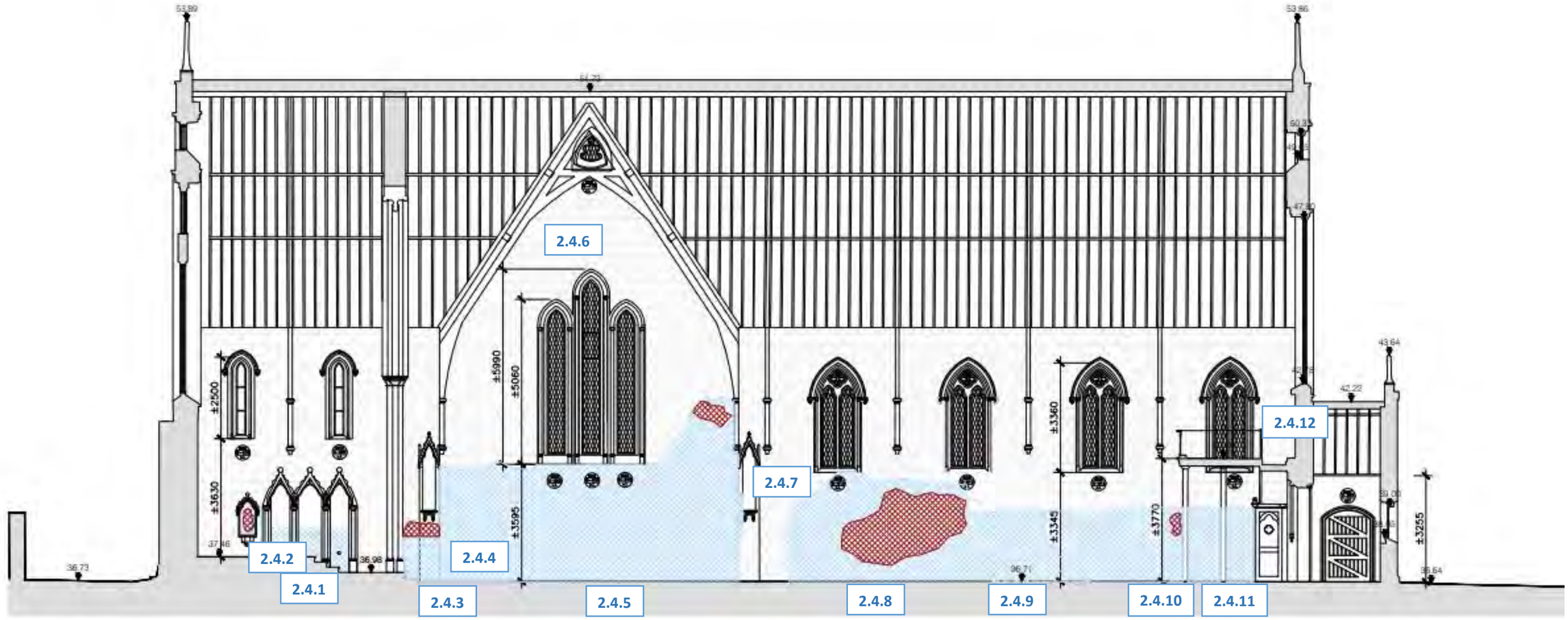

View of the niches behind the alter including small localised areas of boastering to the plasterwork which has been stencilled.

2.3.12

Decorative terrazo and mosaic flooring to alter including door G-D03, in good condition.

2.4 Existing Section B-B (View East)

Note: Area of blue and red hatch indicates deteriorated plaster finish.



2.4 Existing Section B-B (View East)

2.4.1

View east of the alter, including windows W-G06-07 at high level and decorative statue niches. Lined-and-ruled plaster finish which differs from the main areas of the church.

2.4.2

Detailed view of decorative statue niches. Entire niche has boast plaster. Three remaining niches have tide lines and efflorescence.

2.4.3

View of painted decorative plasterwork to ribbed arch above the alter in good condition.

2.4.4

View of junction between the alter and the north wall of the east transept. Note modern replacement baptismal font and loss of detail to the plasterwork at low level due to repairs and rising damp.

2.4.5

View of east transept. Random ashlar pattern to plasterwork at high level and flat finish to low level. Opening section to central window not operational.

2.4.6.

High level view above central window W-G08-10. Note plasterwork and paint finish in fair condition.

2.4.7

Decorative plasterwork detail to statue niche between the nave and east transept. Plasterwork boast and paint finish peeling.

2.4.8

Window W-G12, fixed window. Large area of flaked paintwork and boasted plaster below cill level, which previous repairs have been undertaken.

2.4.9

Window W-G13, fixed window. Loss of stencilled paintwork detail and boasted plaster below cill level. Plaster repairs apparent at low level.

2.4.10

Window W-G14, fixed window. Radiator coming away from wall due to boast plaster. Plaster repairs apparent at low level.

2.4.11

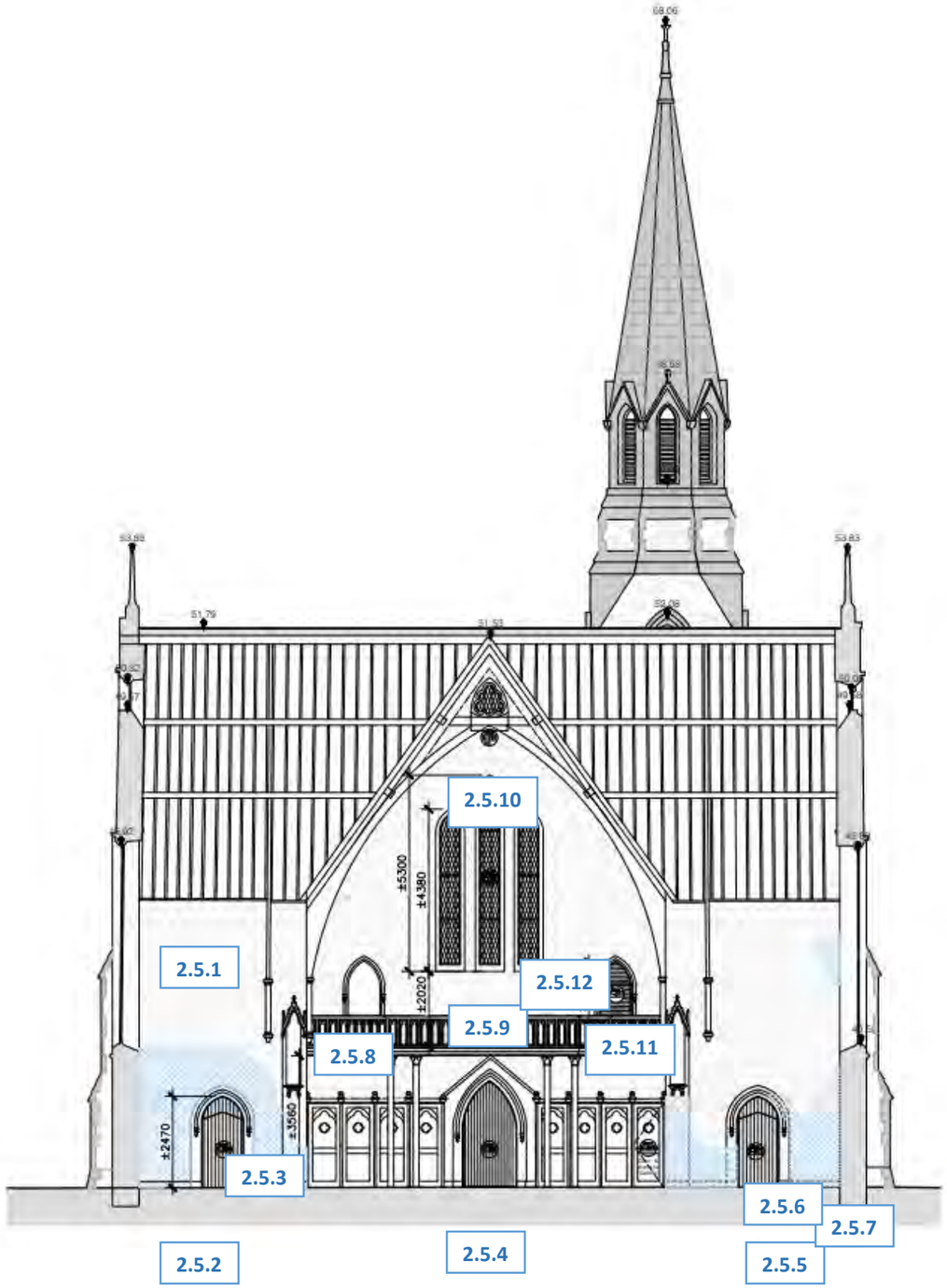
Window W-G15, fixed window. Boasted plaster below cill level. Plaster repairs apparent at low level.

2.4.12

View from the choir balcony of windows W-G15, fixed window. Decorative paintwork stencilling at high level of wall.

2.5 Existing Section D-D (View South)

Note: Area of blue and red hatch indicates deteriorated plaster finish.



2.5 Existing Section D-D (View South)

2.5.1

High level view of the roof structure looking south east along the east transept with secondary steel ties apparent.

2.5.2

View south of door G-D04, east transept. Low level areas has been replastered and is in poor condition.

2.5.3

Section of cracked and boasted plaster at the junction between the nave and east transept.

2.5.4

View of central aisle to the south, with choir balcony structure atop cast iron columns, understood to be original to the church.

2.5.5

View south of door G-D12, west transept. Plasterwork in poor condition.

2.5.6

View of door G-D12 including piped services surrounding. Plasterwork in poor condition at low level.

2.5.7

Area of deteriorated plaster finish to the rhs of door G-D12.

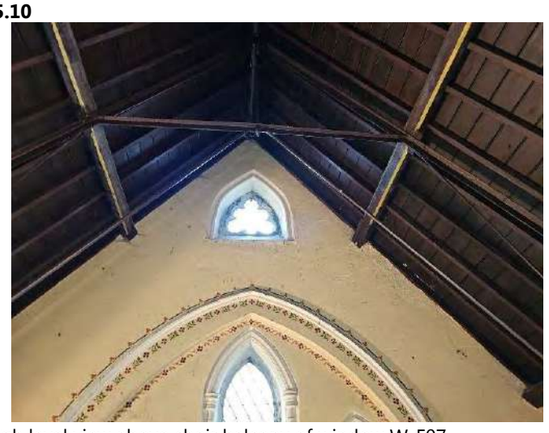
2.5.8

View to the lhs at balcony level including a niche mirroring the plasterwork detail of the door on the opposite side of the balcony. Random ashlar pattern finish with stencilling detail to window.

2.5.9

View of window W-G27 to choir balcony. Heavy mould growth to the stone mullions and water staining to painted reveals.

2.5.10



High level view above choir balcony of window W-F07.

2.5.11

View to the rhs at balcony level including door F-D01 to the bell tower.

2.5.12

Detail of the cast iron columns supporting the choir balcony “Tonge & Taggart South City Foundry 40 & 41 Bishop St Dublin”.

J.N. & G. Traynor & Partners

CHARTERED BUILDING SERVICES CONSULTING ENGINEERS

4 Herbert Place, Dublin 2. Tel: 01-6628003

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Ms Ailbhe Dunlea
1 Mount Street Crescent
Dublin 2

AF/mm/1372/report01

1st September 2023

RE: CHURCH OF ST MARY & ST PATRICK
AVOCA, CO WICKLOW

REPORT ON EXISTING BUILDING SERVICES INSTALLATIONS

Dear Ailbhe,

Please find enclosed our Report on the above.

We are available to discuss this at your convenience.

Yours sincerely,

J.N. & G. Traynor & Partners

CHURCH OF ST MARY & ST PATRICK
AVOCA, CO WICKLOW
CO WICKLOW

REPORT ON
REPORT ON EXISTING BUILDING SERVICES INSTALLATIONS

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1 Mount Street Crescent
Dublin 2

Chartered Building Services Consulting Engineers:
J.N. & G. Traynor & Partners
4 Herbert Place
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Job No. 1372 SEPTEMBER 2023

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CHARTERED BUILDING SERVICES CONSULTING ENGINEERS
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CHURCH OF ST MARY & ST PATRICK
AVOCA, CO WICKLOW
CO WICKLOW

REPORT ON EXISTING BUILDING SERVICES INSTALLATIONS

PREAMBLE

Members of our staff visited the church on 22nd August 2023. The visit was carried out inspect the existing building services installations serving the church and to carry out tests on the electrical installations (loop impedance, earth continuity, etc). The visit included visual surveys of the electrical and mechanical installations. This visit was held jointly with Ms Ailbhe Dunlea of Fitzgerald Kavanagh and Partners, Architects. We met with Very Rev. Fr Michael Murphy, Mr Billy O'Brien of the Parish Committee and Mr PJ Smith, a local contractor who previously carried out works in the Church. Access was provided to all areas of the building.

This report should be read in conjunction with the attached Heating Options Report as well as the attached Photograph Album.

Please note that any recommendation are based on the assumption that the works are repair and maintenance works and not subject to Part L of the building regulations.

THE BUILDING

The building is a detached four-bay structure with transepts and two-bay chancel single-storey Church, built 1862 and located on an elevated site in the village of Avoca. The building is constructed in rock-faced squared rubble with ashlar dressings and built in French Gothic style. It is cruciform in plan with an octagonal sacristy with a pyramidal roof on the northern end of the Church and an attached bell tower on the southern end of the Church. The Church is elevated and set back from the main road behind wrought-iron railings with matching gate and square gate pillars.

A small choir gallery is located on the tower end of the Church and is accessed internally from the rear of the Nave. The main door of the Church and original Baptistry is located on the southern end of the Church at the rear of the bell tower but I understand that this door is rarely used and the door used mostly by the congregation is located at the west transept. The Sacristy is located at the northern end of the Church and comprises a small entrance porch and a small Sacristy. The boiler room serving the Church is located remotely in the ground of the Presbytery. The ground surrounding the Church is generally a macadam surface with some areas of planting along the boundary with the main road.

The ceiling of the church is dark timber and the main walls are plastered. Stained glass windows in the apse and clear glazing in the nave and transepts provides natural light into the interior. Flooring in the aisles is generally carpet below the seating and tiles in aisle areas.

We noted a pervading smell of dampness throughout the building and we understand that this may be due to water ingress as well as the complete lack of ventilation.

ELECTRICAL INSTALLATIONS

We carried out a spatial survey first and then established the condition of the electrical distribution system. We carried out loop impedance, earth continuity and voltage drop tests on the General Services and Electrical installations.

The basic electrical infrastructure appears to have been installed in the 1960s and the installations appear to have been modified and added to numerous times over the years with some recent modifications to the electrical wiring serving the church lighting. Earthing is generally carried out throughout the older sections of the installation via the metal conduit and trunking system. Earth wires associated with the more recent installations appear to be generally terminated at the main distribution board but we suspect that section of earthing may be by the original conduit installation.

The older cabling type is red and black which dates from the 1960s. Newer installations are carried out in NYMJ cabling. Generally, the installations are in poor or decrepit condition with the exception of the newer cabling serving the lighting in the church. However, the earthing of the lighting system appears to be contingent upon the original conduit installation.

ESB NETWORKS INCOMING SUPPLY

The ESB Network supply enters the building through the window in the Sacristy (Photo 1). The supply appears to be fused at 60 amps (Photo 2) and the ESB Networks meter is located at high level above the main distribution board (Photo 3). The installation has damaged the fabric of the building, is extremely untidy, unsightly and reading of the meter requires the meter reader to stand on a chair to view the reading.

MAIN AND SUB-MAIN DISTRIBUTION BOARDS

The main distribution board is a wall mounted unit located in the Sacristy directly below the ESB Networks meter. The board is domestic in nature and appears to be the main distribution board serving the building (Photo 4). The board contains the main customer circuit breaker, miniature circuit breakers for various circuits and a single RCBO serving socket circuits (Photo 5). We noted that the main customer circuit breaker was rated at 63 amps which is greater than the rating of the fuse on the incoming ESB Networks supply (Photo 6). Therefore, discrimination has not been achieved.

We noted multiple conductor colours within the distribution board including blue, brown, green & yellow, red and black. This would concur with our opinion that the installations have simply been added to and extended over the years but the basic infrastructure is the system installed in the 1960s.

We noted that a separate supply has been taken from this board to feed a sub distribution board which is located in the Sacristy lobby (Photo 7). We also noted that this supply has been fused at 63 amps which is the same rating as the main distribution board and is greater than the fusing on the main ESB Networks supply. Proper discrimination has not therefore been achieved within the installation.

Photograph 8 shows a view of the incoming ESB Networks supply, the main distribution board and various sections of conduit and cabling emanating from the board.

The sub distribution board is located in the lobby of the Sacristy area. The board is located at high level and would appear to be of recent vintage (Photo 9). The board consists of a main incoming circuit breaker, fused at 63 amps as noted above and a series of miniature circuit breakers which appear to connect to the lighting installation in the Church (Photo 10). Cabling colors are brown and blue with a yellow/green earth wire. The board would appear to be in reasonable condition. A bank of light switches located directly below the board (Photo 11) which appeared to switch the lighting in the Church connected to this distribution board.

We noted a separate switch bank located on the wall of the sacristy (Photo 12). This switch bank was labeled with various lighting circuits and we are unsure if the majority of this switch bank is in current use. However, we note that a number of light switches are in use and we would assume that there is a connection between this switch bank and the sub-distribution board.

We noted that there appeared to be an external earth serving the main distribution board but we could not locate an external earth pit during our inspections.

GENERAL SERVICES SOCKETS

A very limited number of general services sockets are provided within the Church and Sacristy. Sockets and associated cabling appear to date from the 1960's installations onwards. We carried out earth continuity and impedance tests on all general services sockets within the Church and Sacristy. The recorded values of all tested outlets were generally within the required tolerances with the exception of a limited number of sockets where no earth or a poor earth was present (e.g service socket at the east transept).

Wiring to the socket outlets would appear to be generally in red and black cabling dating the main installation from the 1960's. We also noted a number of instances of MICC cabling. Over the years, circuits have been extended by utilising these existing sockets (Photo 13). It would appear that these extended sections have separate earth wires but these earth wires are simply terminated onto the back box of the existing socket. The conduit installation is therefore relied upon to provide an earth for the existing and new sockets. In the case of MICC cabling, the copper sheath has been relied upon to provide an earth. We identified original sockets in which no earth wire was present (Photo 14) and where the conduit is being relied upon solely for an earth.

LIGHTING INSTALLATIONS

The main lighting in the nave, transepts and Sanctuary of the church is in the form of surface mounted linear tungsten halogen luminaires mounted at high level at the junction between the roof and the external walls (Photos 15 & 16). Each luminaire location appears to be fitted with 2No luminaires. A luminare is directed downwards towards the congregation and a separate luminaire is directed upwards to provide up-lighting to the ceiling. However, the ceiling is extremely dark timber and an attempt has been made to highlight the ceiling timbers by using a gold paint on the underside of the timber arches. The luminaires illuminate these gold painted sections (Photo 17).

We noted a number of newer LED luminaires serving the Sanctuary area but these were not functioning at the time of our inspection (Photo 18). The Sanctuary area is also fitted with bare fluorescent luminaires mounted on the arch in an attempt to backlight the apse (Photo 19). We understand that the wiring serving these luminaires is of recent vintage and our investigation indicates that these luminaires are wired to the sub-distribution board in the sacristy lobby.

The resultant lighting level as well as the overall lighting effect in the church is extremely poor. Colour rendering of the luminaires is reasonably good but the benefits of this are negated by the resultant poor lighting levels and glare from the installation.

The existing luminaires would appear to be exterior quality floodlighting which is designed for illuminating large areas to a relatively low level (e.g car parks). Expected lighting levels in Churches have increased as a result of the requirements of an older attendee and the general increase in lighting levels throughout homes, businesses etc. The appearance and glare control of the installation is also poor and, in combination with the finishes of the church, the performance of these luminaires do not do justice to the architecture of the building nor provides sufficient illumination from modern requirements.

We estimate that each of the nave fittings may consume between 500 and 1000 watts of electricity. Due to the wide floodlight nature of the luminaires, the overall efficiency of the luminaire is very poor compared to a modern LED luminaire with concentrated output. We would anticipate that a modern luminaire providing a higher standard of illumination to the nave and the Sanctuary would require approximately 30% - 40% of the current electrical consumption of the existing lighting installation.

The Sanctuary area (Photo 20) is illuminated with a combination of the above noted tungsten halogen luminaires, exterior quality LED floodlighting (not functioning at our inspection) as well as bare fluorescent luminaires providing backlighting to the apse.The existing lighting installation in the sanctuary presents distracting glare and renders the Sanctuary area bleak in appearance and lacking in focus. The installation does little justice to the architecture of the building or the dignity of the Sanctuary area. There is no highlighting of the liturgical elements and no opportunity to concentrate lighting on specific elements for various celebrations (e.g. highlighting of the Altar, Ambo etc).

The overall lighting installation in the Church does little to enhance the architecture of the building or to provide an atmosphere of contemplation or of celebration. The Sanctuary area is illuminated in a similar fashion with no emphasis on the liturgical elements.

Consideration should be given to the replacement of the lighting system in the church with a system appropriate to the architecture of the building, suitably discreet to avoid glare distraction, flexible for differing liturgical celebrations and have inherent low energy and low maintenance costs.

We note that no feature lighting has been provided to serve the Stations of the Cross nor of the various statues in the Church (Photos 21 & 22).

Ancillary areas of the church such as the main and side porches are very poorly illuminated with luminaires which are beyond their economic life (Photos 23 & 24). These luminaires should be replaced with energy-efficient long life type fittings giving a greater output and which are in keeping with the architecture of the building.

The Sacristy area is illuminated by a poor quality bare twin fluorescent luminaire (Photo 25). This fitting is unsuitable for this area and is beyond its economic life.

External lighting in the church consists of combination of recently installed LED type floodlights mounted on the building (Photos 26 & 27) as well as a number of floodlights serving the eastern elevation of the building facing onto the main road as well as a floodlight mounted on the boiler house adjacent to the Presbytery serving to backlight the stained glass window in the apse of the church. The flood lighting installation is executed very poorly with NYMJ cabling in conduit penetrating the windows of the sacristy and tower areas and resulting in damage to the building fabric (Photos 28, 29 & 30). We noted that none of the external exits were provide with external illumination contrary to regulations (Photo 31 & 32)

Overall, the external lighting installation does not comply with the requirements for external lighting installations for pedestrian safety. This leaves the parish open to claims in cases of personal injury or vehicular accident. The church and surrounding external environment would also benefit from an appropriately designed feature lighting scheme.

The lighting installation in the tower appears to be a combination of the 1960's electrical installation and more recent installations where the bell has been automated and additional external lighting installed. In general, the installations are in decrepit condition with more recent non IP-rated equipment installed in an extremely damp environment (Photos 33 & 34). The resultant illumination level from the lighting installation is poor. We could not visit the bell level as the stairs appeared to be damaged due to dampness with compromised stability.

The lighting installation is not fitted with a separate earth and therefore the lighting installation relies on the metallic conduit and containment system for an Earth. Conduit has been compromised in places and therefore many of the light switches may not have Earths present.

EMERGENCY LIGHTING

There is no existing emergency lighting installation in the building. An emergency lighting installation should be provided in accordance with current regulations, *IS 3217: 2013 - "Emergency Lighting and Amendment 1:2017 Emergency Lighting"*. Emergency lighting systems in churches are especially important as an anti-panic feature in the event of a failure of the lighting installation.

FIRE ALARM SYSTEM

We noted that there is no fire alarm system, contrary to the requirements of "*I.S. 3218 :2013 Fire Detection & Alarm Systems*". A fire alarm system is required to protect the building and its occupants from the outbreak of fire.

INTRUDER ALARM SYSTEM

We note that there is no intruder alarm system fitted in the building. We would recommend the installation of an intruder alarm system that would be remotely monitored to protect the building during unoccupied hours.

LIGHTNING PROTECTION

The building is provided with a lightning protection system comprising of a series of down conductors and possibly a ridge conductor running along the ridge of the nave and transepts (Photos 35, 36 & 37). In our opinion, there would appear to be a large number of down conductors. We noted that some of the conductors have been very poorly installed (Photo 35) and are coming away in sections and we also understand that some roof tiles have been damaged due to inappropriate installation methods.

CCTV INSTALLATION

We noted that no CCTV system was provided in the building. CCTV systems have various functions including property protection, crime deterrence as well as public liability functions. Consideration should be given to the installation of a CCTV system.

SPEECH REINFORCEMENT INSTALLATION

The speech reinforcement installation comprises central control and amplification equipment located in the sacristy, microphone outlets in the sanctuary area, an induction loop for the hard of hearing and loudspeakers mounted on the walls of the church as well as an external horn loudspeaker facing the main road.

The central control equipment comprises a mixer power amplifier, an induction loop amplifier and a compact disc player. These are mounted on a shelf at high level in the sacristy area (Photo 38). The equipment would date from approximately 15 years ago but the wiring appears to date from the 1960s installation.

Microphone inputs are generally 5amp three pin plug type which may date pre-1960's. (Photos 39, 40 & 41). These are located on the sides of the sanctuary serving the chair and the ambo as well as an outlet mounted on the rear of the altar. We noted that these locations require trailing cables and these are always a trip hazard in such locations.

An induction loop is provided but we are unsure if it is currently functioning.

Loudspeakers are generally small column type and are located on the walls of the nave and transepts (Photos 42 & 43). Our research indicates that these are generally lower quality loudspeakers.

We noted that a number of loud speakers are mounted on walls to the rear of the congregation which leads to a discordance between the position of the person speaking and the listener resulting in confused acoustics and lack of intelligibility.

We noted that the lighting control panel inside the sacristy door (Photo 44) had a reference to *Shrines & PA* as well as to *radio microphone.* It is a possibility therefore that the lighting and general services installation is connected at this switchbank. We could also find no evidence of a radio microphone receiver in the sacristy.

HEATING INSTALLATIONS

The church is heated by an oil fired low pressure hot water heating system comprising of 2No oil fired boilers located in a remote boiler room in the Presbytery grounds and wall mounted panel type radiators located on the walls of the nave, transepts and at the rear of the apse.

The boiler room is remote from the church and located in the grounds of the Presbytery. The plant consists of 2No firebird condensing oil fired boilers each with a rating of 73 Kw giving a total connected load of 146 Kw (Photos 45, 46 & 47). The main flow from the boilers are combined into a single header and are then split into 2No circuits (Photo 48) which we understand serve either side of the church. This would be an unusual circuit arrangement for a Church.

Each boiler is flued individually through the rear wall of the boiler house. In general, the boilers burners and flue systems appear to be in good condition and of relatively recent vintage.

There is a complete lack of ventilation in the boiler room resulting in an overpowering odour of kerosene.

The oil storage tank is located in a compound adjacent to the boiler house (Photos 49 & 50). The tank appears to be steel and would also appear to date from the 1960s. A level system is installed but is not operational. The tank is showing evidence of rust. The pipework installation between the tank and the boiler room is showing signs of advanced corrosion and is in poor condition (Photos 51, 52, 53 & 54).

We are unsure as to the nature of the pipe work underground between the remote boiler room and Church but would suspect that it is mild steel perhaps wrapped in a moisture repellent material. It would appear that the pipe work enters the church at the apse and travels around the walls of the church, generally above ground, to supply the radiators. We noted there would appear to have been an earlier installation under the floor as evidenced by cut pipework emanating from underfloor in the area of the entrance facing the main road (Photo 55). We would suspect that the underground pipe work has been corroded and was replaced with the above ground installation at some point in the past (possibly during the 1960s).

The heating pipework is generally poorly executed and in many areas prone to injuring persons walking by close to the pipework along the walls (Photos 57). We also noted that pipework rises and falls to avoid doors etc (Photo 58). This configuration is prone to air locking in the heating pipework.

The radiators appear to date from the 1960's and externally would appear to be generally in reasonable condition for their age. The units are not fitted with convector fins and some are loose on the walls as a result of failed plaster at the rear. We noted that recent pipework repairs have been carried out due to leaks and we would conclude that the pipework system is under severe stress due to corrosion. The internal surfaces of the radiators would be in similar condition and this combined with their age would indicate to us that the radiator and pipework installation have reached the end of their economic life.

We carried out a brief analysis of the heat loss in the building, the boiler size and the capacity of the radiator installation. It would appear that the overall heat loss of the building (i.e. the heat requirement), is in the order of 100 kw. The installed boiler capacity is 2 x 73kw = 146kw. However, the radiator capacity is approximately 40kw to 50kw. This would result in inadequate surface area to heat the building and would concur with the comments noted at our inspection that the building is cold during the winter with the heating on.

CONCLUSIONS AND RECOMMENDATIONS

ESB NETWORKS SUPPLY AND METERING

The existing ESB Networks supply and metering arrangement is in an unsuitable location and a location in which it is difficult to read the meter. The incoming supply cabling has damaged the window frame in the sacristy area.

Recommendation:

We would recommend that the supply and the meter be relocated to a position outside of the building or even away from the building (e.g. on the wall adjoining the Presbytery). The supply could then be taken underground into the new main distribution board location. This would have the effect of making the meter easier to read as well as restoring the fabric of the building.

MAIN SWITCHBOARD AND DISTRIBUTION

The readings for the majority of electrical impedance of tested general services sub-circuits were within acceptable parameters and earth continuity was generally maintained throughout the system. However, there were a number of notable exceptions. The maintenance of Earth continuity is fortuitous as Earthing throughout the system is by a combination of means (separate earth wires in newer installations connected to metal conduit in the original 1960's installation.

The main distribution board is located in the sacristy, is in very poor condition and is in a poor location. Discrimination is not maintained throughout the installation. While we noted an external earth wire, we could not locate the earth pit for testing purposes. Cabling in the vicinity of the main distribution board is in very poor condition and appears to be a combination of different colors and vintages indicating multiple wiring installations carried out between the 1960's and the present.

The sub-distribution board serving the lighting installation in the church appears to be relatively recent and is wired in the correct colors. However, we found a lack of Earthing in general at light switches. The original 1960s switch bank in the sacristy area appears to be connected to the newer installation and therefore it would appear that sections of the newer lighting installation are relying on the older 1960s wiring and Earthing which is generally through the metallic conduit system.

Recommendation:

A new main distribution board should be provided with suitable fire rated protection to serve the building and located in a more suitable location (i.e in the sacristy lobby). The sub distribution board serving the lighting may be accommodated into the new main distribution board. We would therefore recommend that the installations be rewired with the correct cable colors and with separate earthing arrangements. A new earth pit with suitable access should be provided.

GENERAL SERVICES SOCKETS

General Services sockets are a mixture of vintages and rely generally on the conduit installation for Earthing. Many of the circuits have been extended over the years but the basic infrastructure is the 1960s installation.

Recommendation:

We would recommend that the installations be rewired with new sockets located in suitable locations to suit the current layout and use of the building. This would also negate the requirement for trailing leads etc.

LIGHTING INSTALLATIONS

The lighting level as well as the overall lighting effect in the church is extremely poor. Colour rendering of the luminaires is reasonably good but the benefits of this is negated by the resultant poor lighting levels. The existing luminaires would appear to be exterior quality floodlighting which is designed for illuminating large areas to a relatively low level (e.g car parks). The appearance and glare control of the installation is poor and, in combination with the finishes of the church, the performance of these luminaires does not do justice to the architecture of the building nor provides sufficient illumination for modern requirements. The installations do little justice to the architecture or dignity of the building and there is no opportunity to highlight the liturgical elements in the sanctuary nor to provide meditative lighting to the Sanctuary area, Stations of the Cross or statues. The lighting installation in the ancillary areas of the church and sacristy is in decrepit condition. External lighting of the church is poor and does not meet the requirements for safe pedestrian travel through the area. The building flood lighting has reached the end of its economic life and does not appear to be functioning. None of the external exits are provided with illumination.

Recommendation:

An appropriate lighting scheme should be provided to all areas of the church in sympathy with the building's architecture and to raise general lighting levels but have sufficient switching to meet the various liturgical requirements. The new lighting scheme should provide these facilities and the use of LED luminaires should reduce the running costs considerably. The external lighting installation requires to be upgraded to meet current standards. Appropriate feature lighting should be provided to enhance the environment surrounding the church along with possible floodlighting of the building.

EMERGENCY LIGHTING

There is no existing emergency lighting installation.

Recommendation:

We recommend that a new emergency lighting system be installed to *"I.S. 3217:2013+A1:2017 Emergency Lighting and Amendment 1:20172*", using a combination of illuminated 'EXIT' signs, twin-spot / emergency lighting luminaires. Circuits would be wired back to a new emergency lighting/CTU (Central Test Unit) integrated into the main switchboard.

FIRE ALARM

There is no existing fire alarm installation.

Recommendation:

We recommend that a fire alarm system be installed to comply with *"I.S. 3218 :2013 Fire Detection & Alarm Systems for Buildings – System Design, Installation, Commissioning, Servicing and Maintenance & Amendment 1: 2019"*, utilising a VESDA system in the main body of the church and smoke/heat detectors elsewhere. Break glass units should be installed at exits from the building and sounders located in discrete locations.

INTRUDER ALARM SYSTEM

There is no existing intruder alarm installation.

Recommendation:

We would recommend the installation of a basic intruder detection installation that would be remotely monitored to protect the building during unoccupied hours.

LIGHTNING PROTECTION INSTALLATION

The existing lightning protection installation appears to be adequate but many tapes and down conductors have been poorly installed which we understand has resulted in damage to building elements as well as roof times.

Recommendation:

We recommend that the existing lightning protection system be refurbished, properly attached to the structure without damaging building elements and recommissioned.

CCTV INSTALLATION

No CCTV system is provided in the building.

Recommendation:

We recommend that a basic CCTV system be installed to provide property protection, crime deterrence as well as public liability protection.

SPEECH REINFORCEMENT INSTALLATION

The existing sound system is a combination of poor quality loudspeakers located on the walls of the nave, wiring dating from the 1960's installation and basic amplification equipment dating from approximately 15 years ago. Microphone inputs are limited with trailing leads in the Sanctuary area. Certain loudspeakers are placed in unusual locations having a detrimental effect on intelligibility and the wiring serving the system would appear to be generally in poor condition.

Recommendation:

We recommend that a new speech reinforcement installation be provided to improve intelligibility and negate the current situation with trailing leads in the Sanctuary.

HEATING INSTALLATION

The existing heating installation in the church is incapable of providing comfort conditions in the building due to the nature, size and disposition of the existing radiator installation. The existing radiators are in poor condition and the pipework required recent repairs. The connected system is grossly undersized in relation to the heat requirements of the building and the central boiler plant is grossly oversized in relation to the heat requirements of the building.

Recommendation:

We recommend the installation on an under seat radiator based low-pressure hot water installation connected by a new pipework installation to the existing recently installed boiler plant. Please see attached analysis at the rear of this report.

Order of Magnitude Budget Costings

Electrical Installations

Preliminaries, Removal of Existing, Contingency, Manuals etc	€ 18,000.00
Relocation of ESB Networks Supply & Metering Switchgear, Electrical Power Distribution, General Services & Motive Power	€ 55,000.00
Internal & External Lighting incl Emergency Lighting	€ 155,000.00
Lighting Controls	€ 35,000.00
Fire Alarm	€ 30,000.00
Intruder Alarm	€ 8,000.00
CCTV System	€ 15,000.00
Lightning Protection Works	€ 10,000.00
Sound System	€ 35,000.00
OOM Cost excl VAT, Builder's Work & Professional Fees	**€ 361,000.00**

Order of Magnitude Budget Costings

Mechanical Installations

New Underseat Radiator Heating Installation Utilising Existing Central Boiler Plant	€ 90,000.00
Allowance for Minor Works to Hot & Cold Water Services	€ 5,000.00
OOM Cost excl VAT, Builder's Work & Professional Fees	**€ 95,000.00**

CHURCH OF ST MARY & ST PATRICK
AVOCA, CO WICKLOW

Heating Installations September 2023

J.N. & G. Traynor & Partners

CHARTERED BUILDING SERVICES CONSULTING ENGINEERS

4 Herbert Place, Dublin 2. Tel: 01-6628003

e-mail: info@traynorandpartners.com. Web Site: www.traynorandpartners.com

Existing Installation

- The existing installation in the Church is a perimeter low pressure hot water radiator heating installation. The radiators date from the 1960's and the 1960's pipework appears to have failed and has been bypassed with a more recent above ground pipework installation. This installation appears to be in a stage of failure as evidenced by recent repairs.
- The central boiler plant has been recently replaced and is in good condition. The oil storage tank and oil supply pipework dates from the 1960's and is in poor condition.
- The connected load of radiators in the Church is approximately 50% of the required heat output. The central plant output is 150% of the required heat output and the central plant size is 300% that of the existing connected load. The Church is poorly heated, and efficiencies are poor.
- Heat generated by the existing radiators and surface mounted pipework in the Church rises vertically to roof level, strikes the roof surface, cools and falls in the centre of the church (i.e the convection effect). This appears as a down draught in the centre of the Church and a lack of heat throughout the Church. The high ceiling, lack of insulation, lack of surface area of the heat emitters and down draughts in this Church are the main contributory factors to the poor comfort conditions in the building.
- This Church is an ornate building of architectural interest, and the radiator installation and pipework is poorly executed resulting in pattern staining on the walls as well as presenting a safety hazard in certain locations.
- The existing installation is thermodynamically inadequate to provide comfort conditions throughout the Church.
- Supplemental heating in the form of additional perimeter radiators will not provide the comfort conditions required and will simply lead to increased costs and increased downdraughts in winter .
- The ancillary areas are heated in a similar manner with resulting poor comfort conditions.

Existing Installation - Emitters

Existing Installation – Central Plant

In general, the boiler plant is relatively new but the oil tank and older pipework sections are in poor condition.

Solution Strategies

We have examined 3No available heating strategies / solutions for the Church.

Solution 1

The installation of an underseat radiator heating installation below each seat in the Church and installation as wall mounted radiators in the sacristy and ancillary areas.

This strategy is the most thermodynamically suitable option with the greatest occupant comfort, lowest running cost and system response time. The existing central boiler plant would be reused. New pipework (heating circuits) will be required from the boiler room to each seating area in the Church. Controls would be weather compensated and internal thermostatic control would also be provided. Each seat in the Church would be provided with a heat emitter.

Solution Strategies

Solution 2

Underseat Electric Under Pew Heating Systems & New Electric Radiator System in the Sacristy Areas

This system involves the installation of electric heaters under each seat in the Church. These heaters would be approximately 1000mm long and fixed to the timberwork of the seat. Heaters would be supplied by a cabling infrastructure which would require floor trunking approximately 250mm across x 50mm deep to be run on one side of each section of seating. A number of heaters would be required below each seat to cover the entire length of each seat. The system would be centrally controlled. The existing electrical infrastructure is inadequate and requires to be replaced before installation of this system. Ancillary areas would be heated by wall mounted electric panel heaters. This system has the advantages of localised heating of the congregation, but reduced flexibility in reorganisation of the seating in the Church.

Solution Strategies

Solution 3

Replacement of existing perimeter wall mounted single panel radiator system with a new perimeter wall mounted multiple panel convector radiator installation.

This system involves the replacement of the existing wall mounted single panel radiator system with a new wall mounted radiator system providing larger multi panel convector type radiators which would substantially increase the heat output of the existing system. This solution has the advantage of flexibility in terms of rearrangement of seating in the future. The existing central plant would be reused and the plant has sufficient capacity to serve this system. The main disadvantage with this system is the increased downdrafts in the centre of the church due to the increased convection effect from the radiators resulting in poor temperature conditions in the middle of the Nave. Other disadvantages include the overall width of the radiators (up to 180mm) and the fact that there will be pattern staining on the walls of the church similar to the current pattern staining. Minor reconfiguration of the seating to allow for the increased depth of radiators and radiator shelving may mitigate the above noted effects.

Other Heating Systems Examined & Discounted

We have reviewed various other heating systems as part of our study including:

Electric Radiant Systems

(Discounted due to deficiency of heat in the centre of the church, extremely high running costs, increase in electrical supply required ongoing high maintenance costs and disruption to fabric and finishes during installation). Similar principle of operation to gas fired radiant heater installations.

Other Heating Systems Examined & Discounted

Gas Fired Radiant Systems

(Discounted due to the deficiency of heat in the centre of the church and requirement for extract ventilation to remove water vapour from the combustion process along with disruption to fabric and finishes during installation).

Other Heating Systems Examined & Discounted

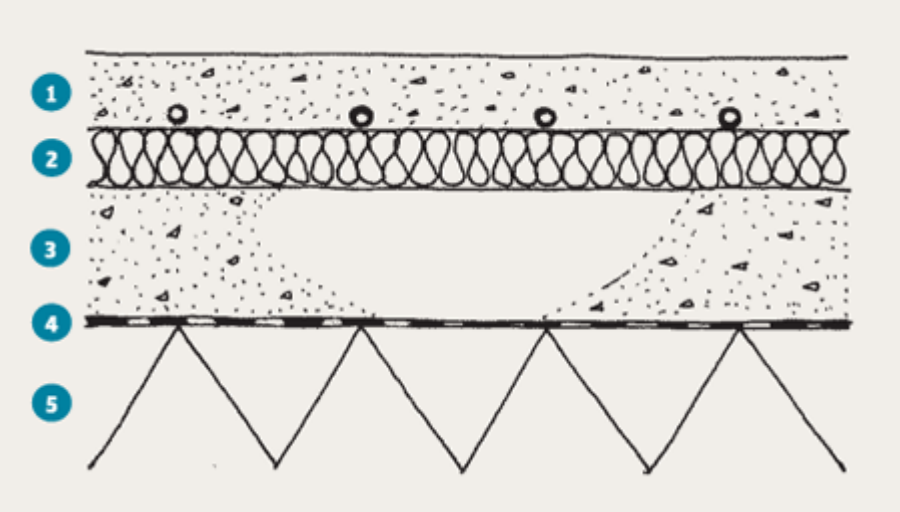
Underfloor Gas Fired Low Pressure Hot Water System in the Church, Sacristy & Ancillary Areas

(Discounted due to extensive builder's work required and extended response times inherent with underfloor heating systems. This option would involve the removal of the existing floor covering in the Church and the creation of the following floor build up from the existing concrete slab upwards:

- Existing Floor Slab
- Insulation Layer
- Underfloor Heating Pipework
- 50mm – 75mm Thick Concrete Floor Screed (Depending on Type)
- New Floor Covering
- Modification of Door Thresholds & Doors & Ramps Required at Floor Level Changes

Underfloor Heating Systems

Floor Buildup



1. New Concrete Screed with Heating Pipework
2. New Insulation on Existing Floor Surface
3. Existing Concrete Floor

Other Heating Systems Examined & Discounted

Gas Fired Radiant Systems

This option would involve the installation of 2No oil fired air handling units adjacent to the Sanctuary, external to the church. These units will supply warm air into the Church via high level 'Drum' type louvres on both sides of the sanctuary (above the side altars). This system pressurises the church and pressure relief would be required at the rear of the church. This system has a rapid response time and is suitable for short occupancy times. Disadvantages include the major structural work required in the creation of the large opes, potential noise issues, the requirement for pressure relief and the disruption to the fabric and finishes of the Church.

Proposed Heating System - Underseat

Underseat Low Pressure Hot Water Heating System in the Church & Wall Mounted Radiator System in the Sacristy and Ancillary Areas

This option would involve the installation of a convector radiator below each seat. Heat would be provided where the congregation are located. Response times are reasonable and the Sacristy and Ancillary areas would be heated by wall mounted panel radiators. The underseat system is virtually invisible in the Church.

Recent Example: Church of the Sacred Heart, Yellow Walls, Malahide

Recommendations

- Electric under pew heating installations are uncommon in Ireland. The main advantages are the very quick response times, cost effectiveness as opposed to all other systems and ease of installation. The main disadvantage is the running costs which are the highest of any heating system discussed.

- Underseat Heating Systems have been used successfully in Churches since the 1960's (Our Lady of Victories, Ballymun Road – 1969, Church of St Mary of the Angels, Church Street (circa 1998) & Church of the Sacred Heart, Malahide (2017). Advantages include rapid response times, possibility of zoning, quiet operation, modest energy use for prolonged periods and concealment. A further advantage in this Church is that the existing central plant is generally in good condition and may be reused to suit the system.

Recommendations

- We would recommend the installation of the underseat heating installation to give the most thermodynamically appropriate installation. The existing central plant would be reused and new pipework installed from the boiler room to serve each radiator mounted under every seat in the Church. Each seat would require to be secured to the floor and the system would be inconspicuous. The system meets the requirements of an effective heating system as well as maintaining the integrity of the fabric and finishes of the building. The removal of the perimeter radiators would remove the current problem of pattern staining to the walls of the Church.

Order of Magnitude Costs

Underseat Heating System in Church & Radiator System in Sacristy & Sanctuary

- Removal of Existing Heat Emitters and pipework in the Church to the boiler room.
- Installation of New Heating Pipework from Boiler Room to Under Seat Areas
- Installation of Radiators Below Each Seat in the Church
- New Control Installation Including Weather Compensation System
- Retention of Existing Central Boiler Plant & Modifications To Same
- Electrical Installation Associated with New System
- Builder's Work in Connection With Installation

Budget Costs

€ 95,000.00 excluding Builder's Work, VAT & Professional Fees

Photo Album

CHURCH OF ST MARY & ST PATRICK

AVOCA, CO WICKLOW

Ref: AF/mm/1372/report01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BS. 1361
TYPE IIa


48045
kWh
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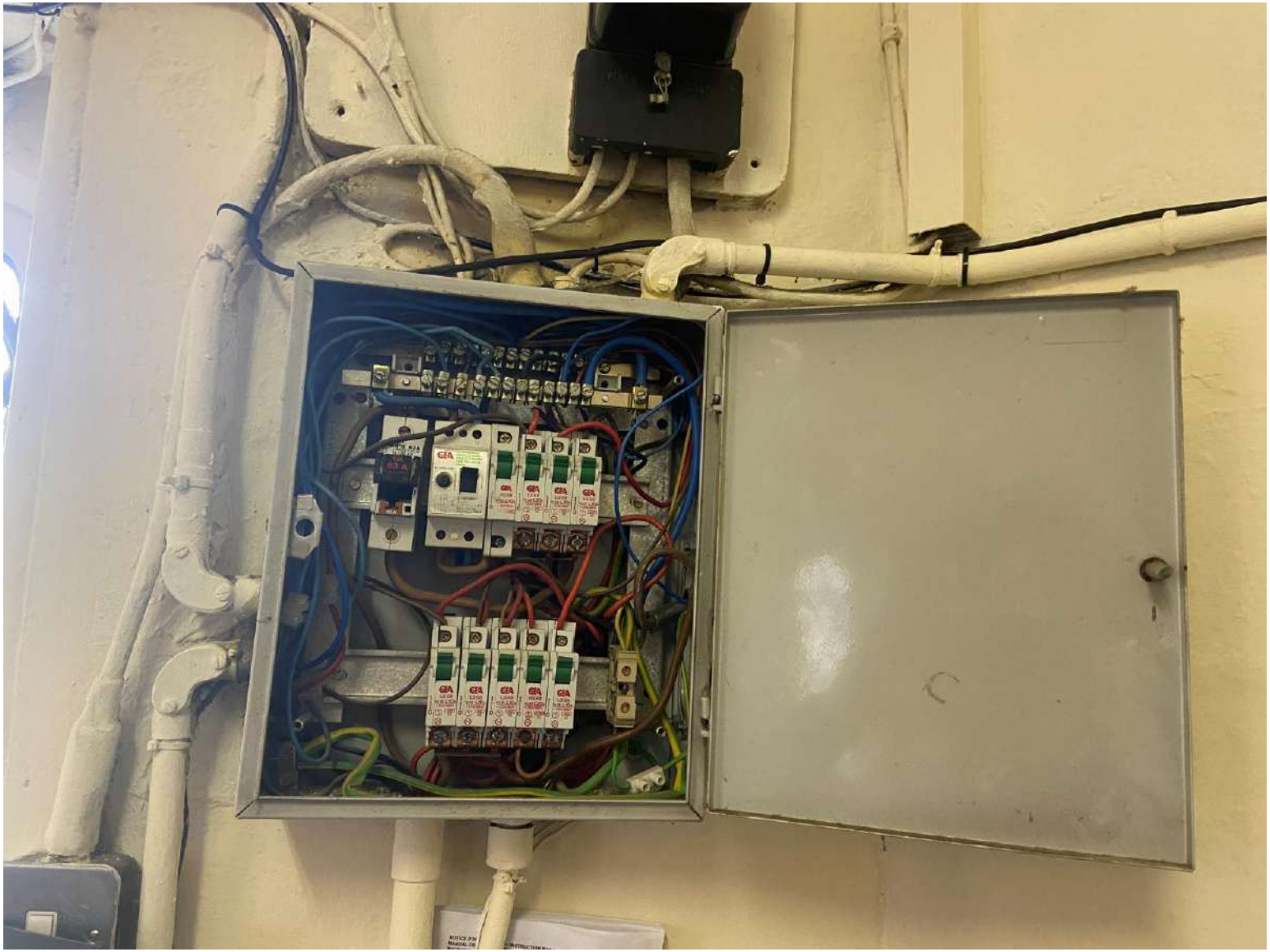

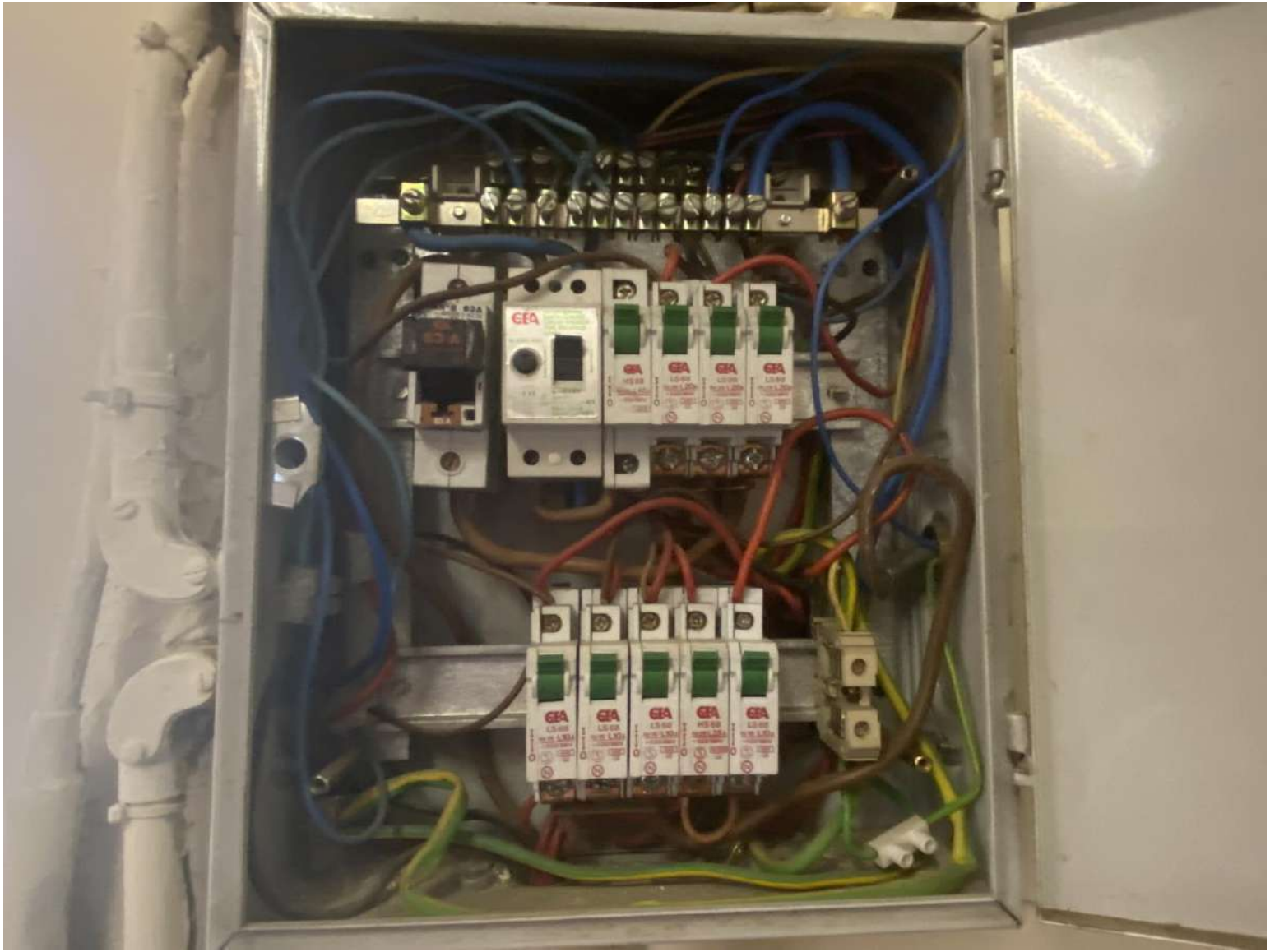
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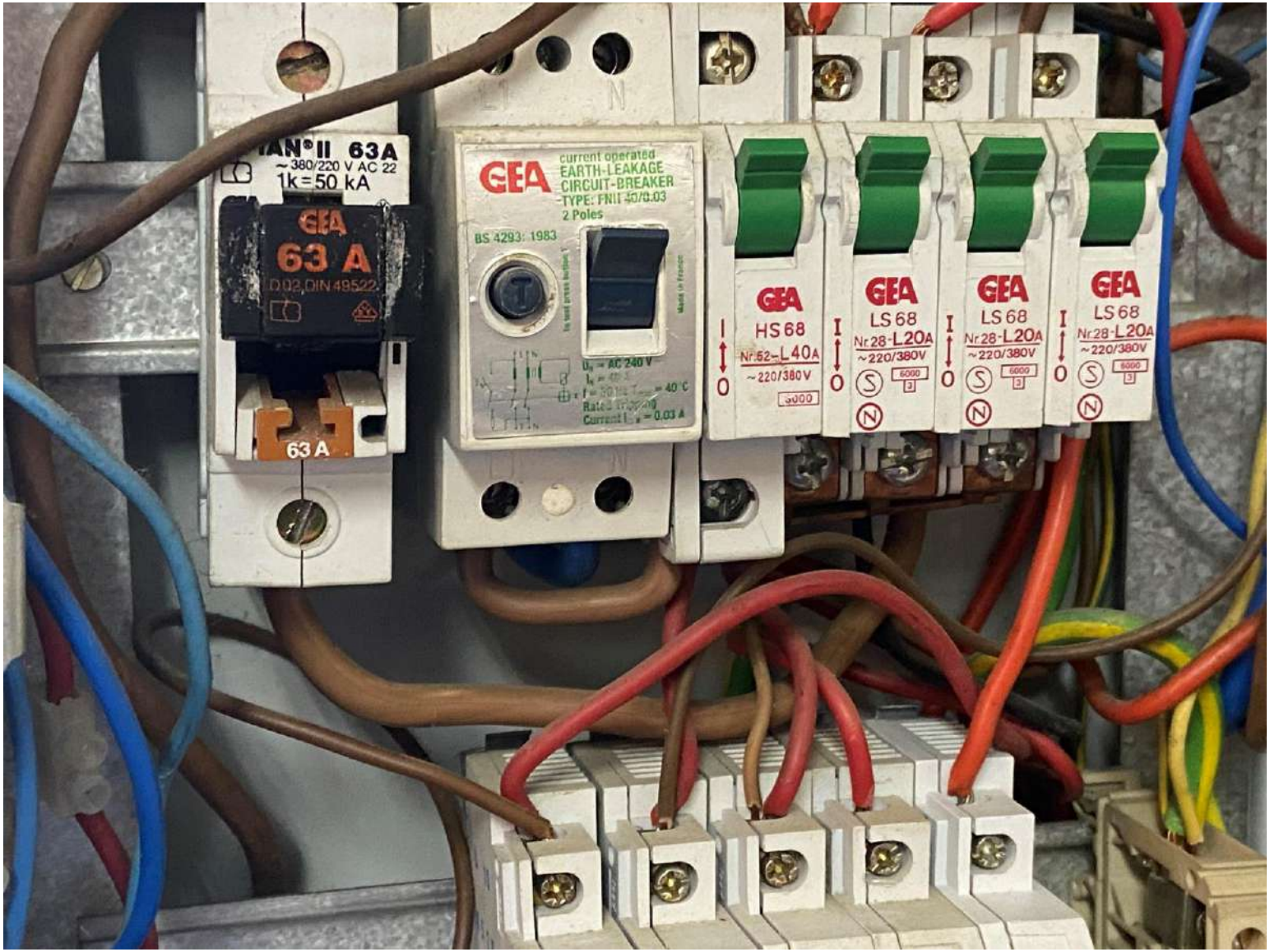
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2 Poles
BS 4293: 1983
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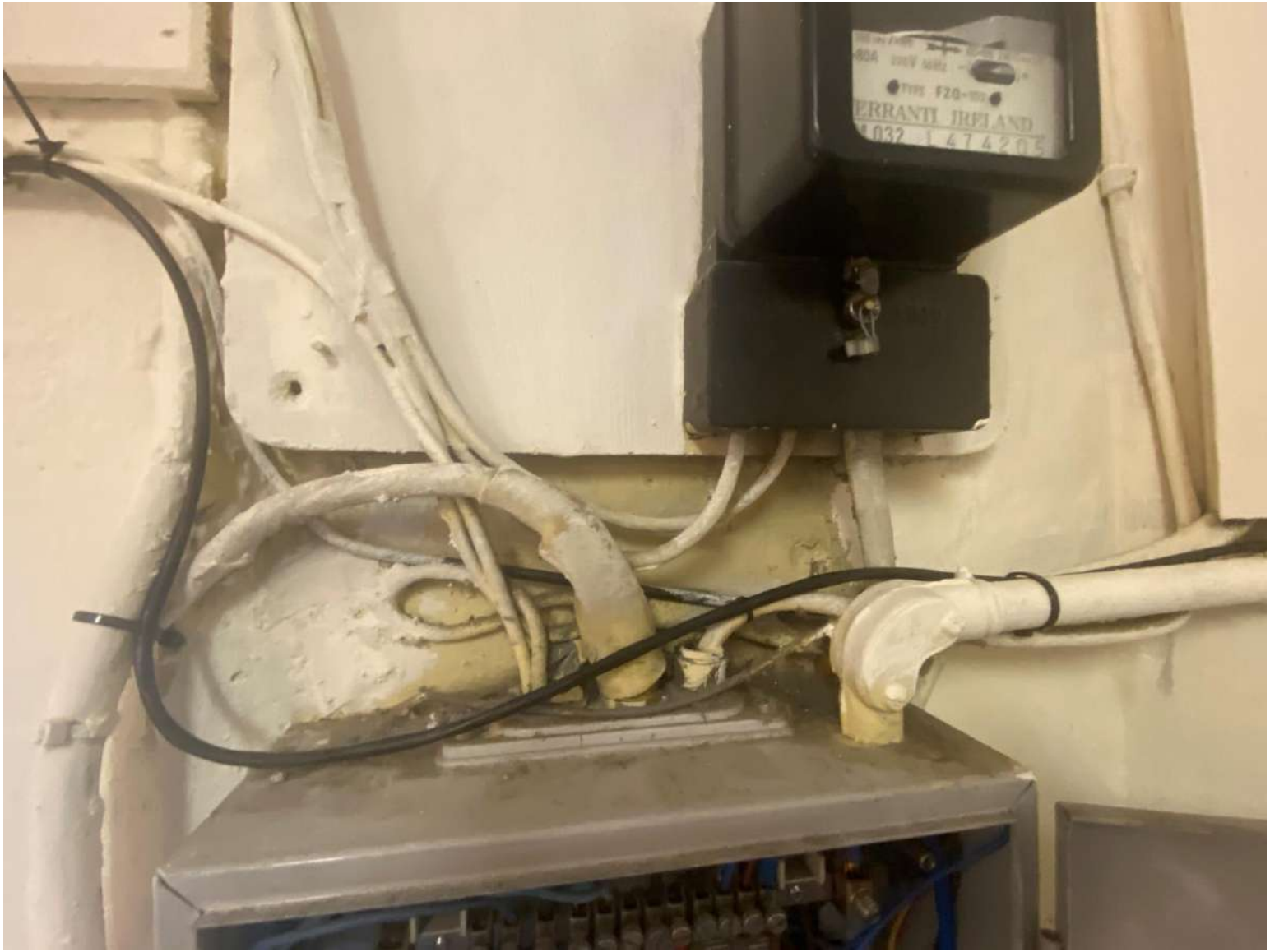
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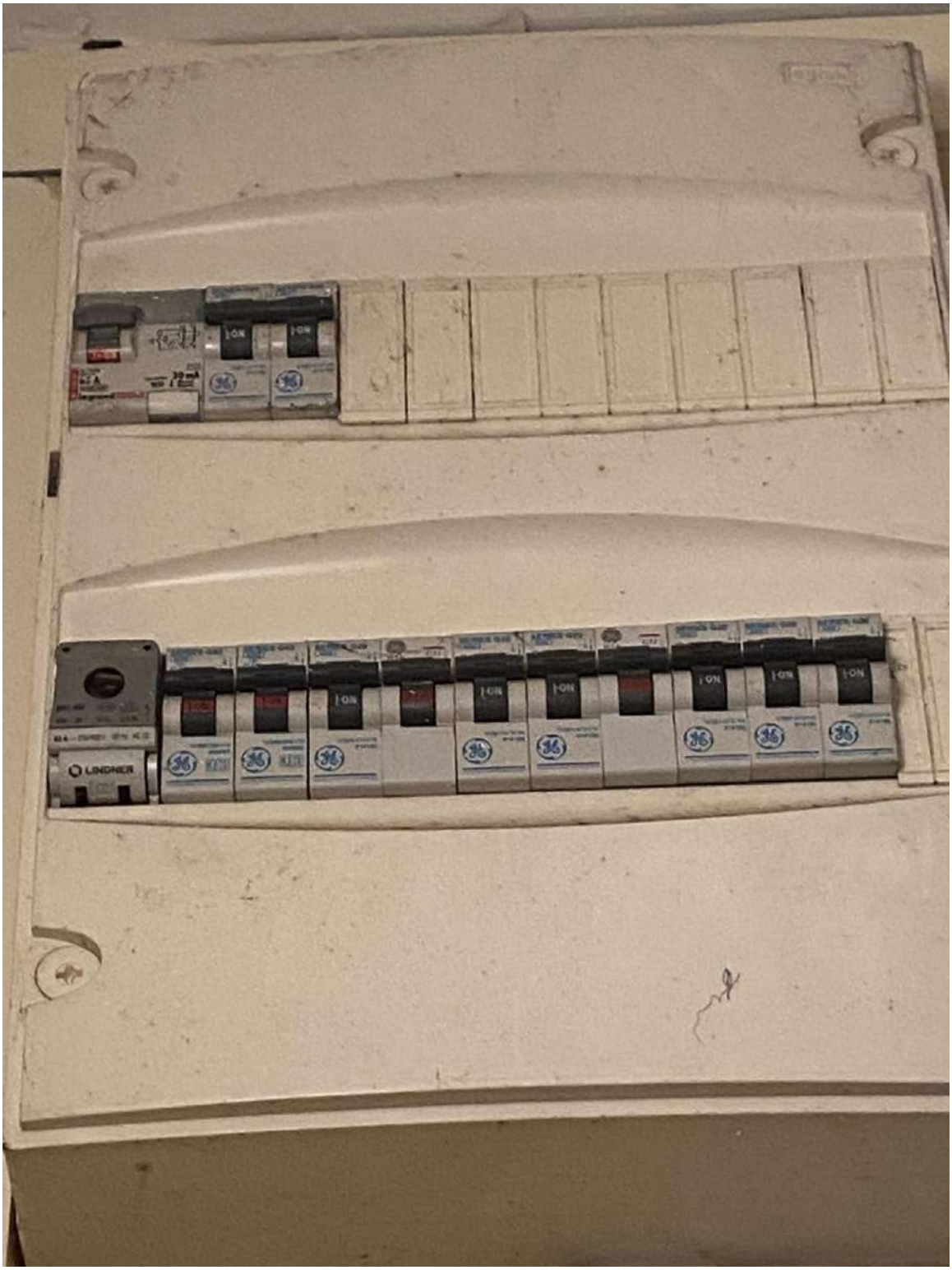
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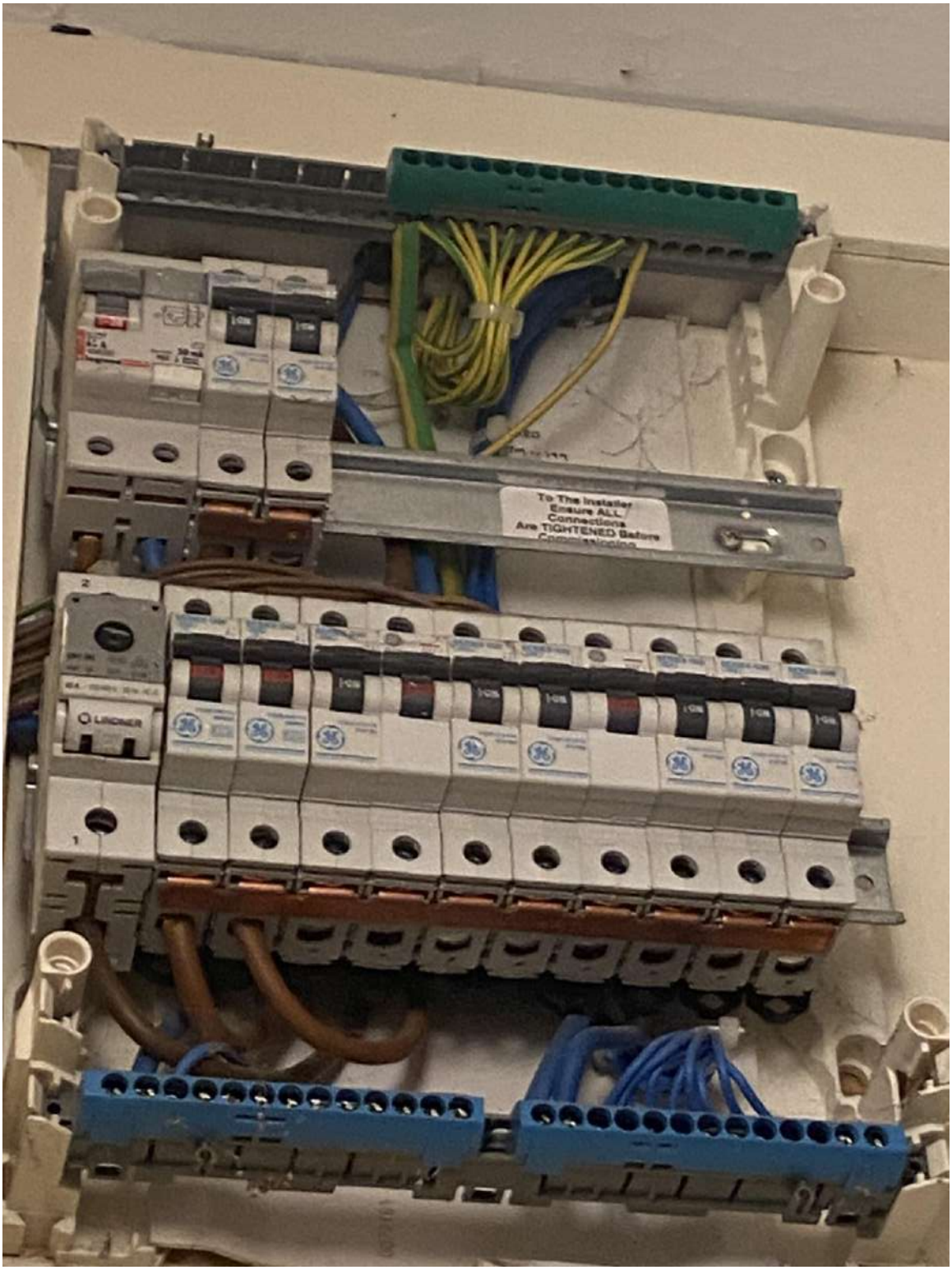
To The Installer
Ensure ALL
Connections
Are TIGHTENED Before


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SACRISTY
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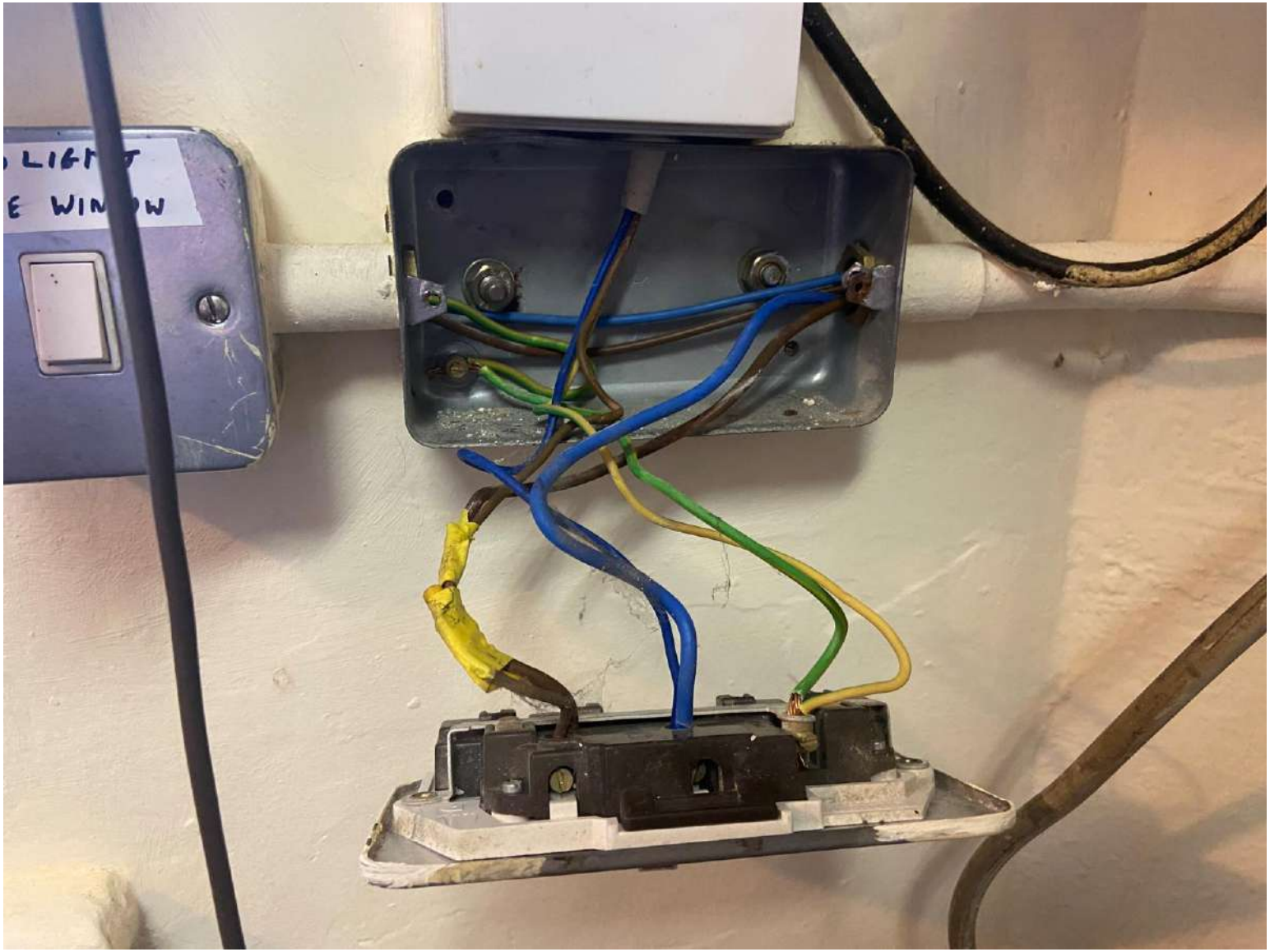
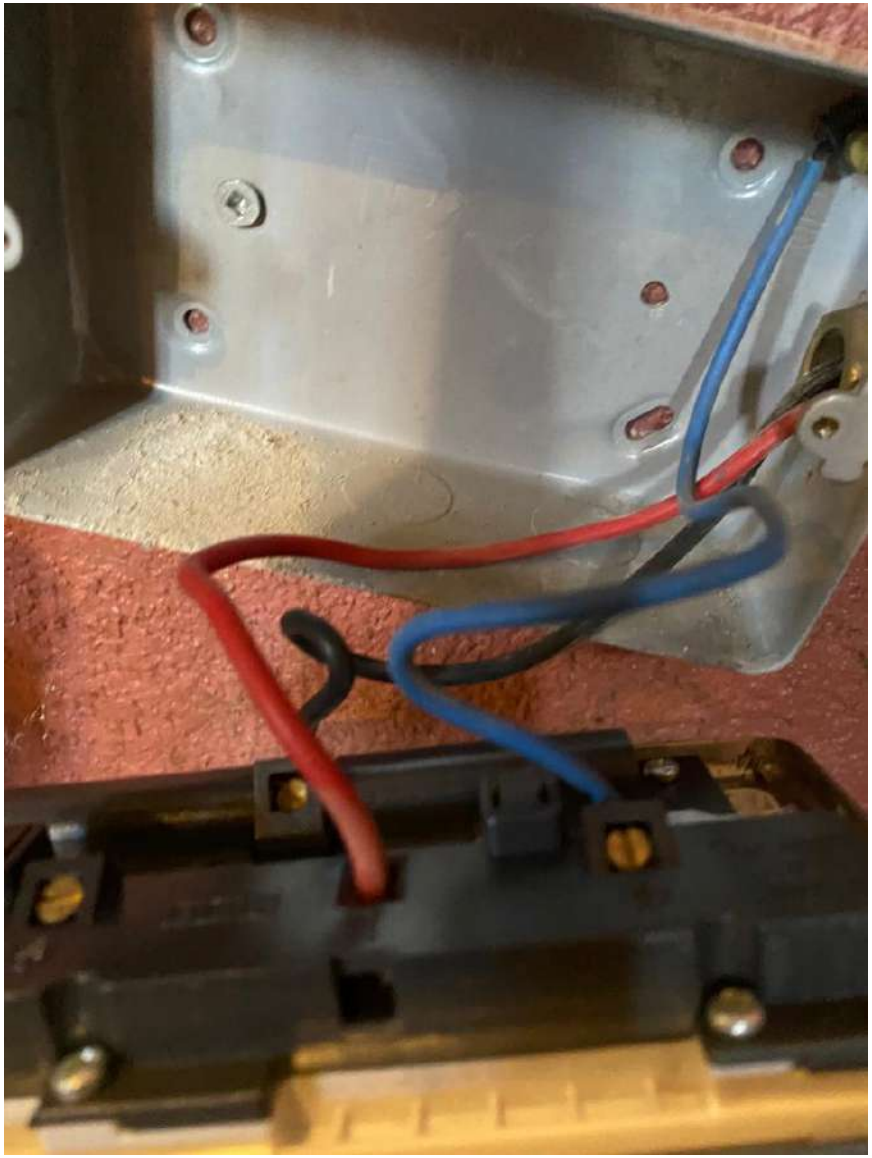
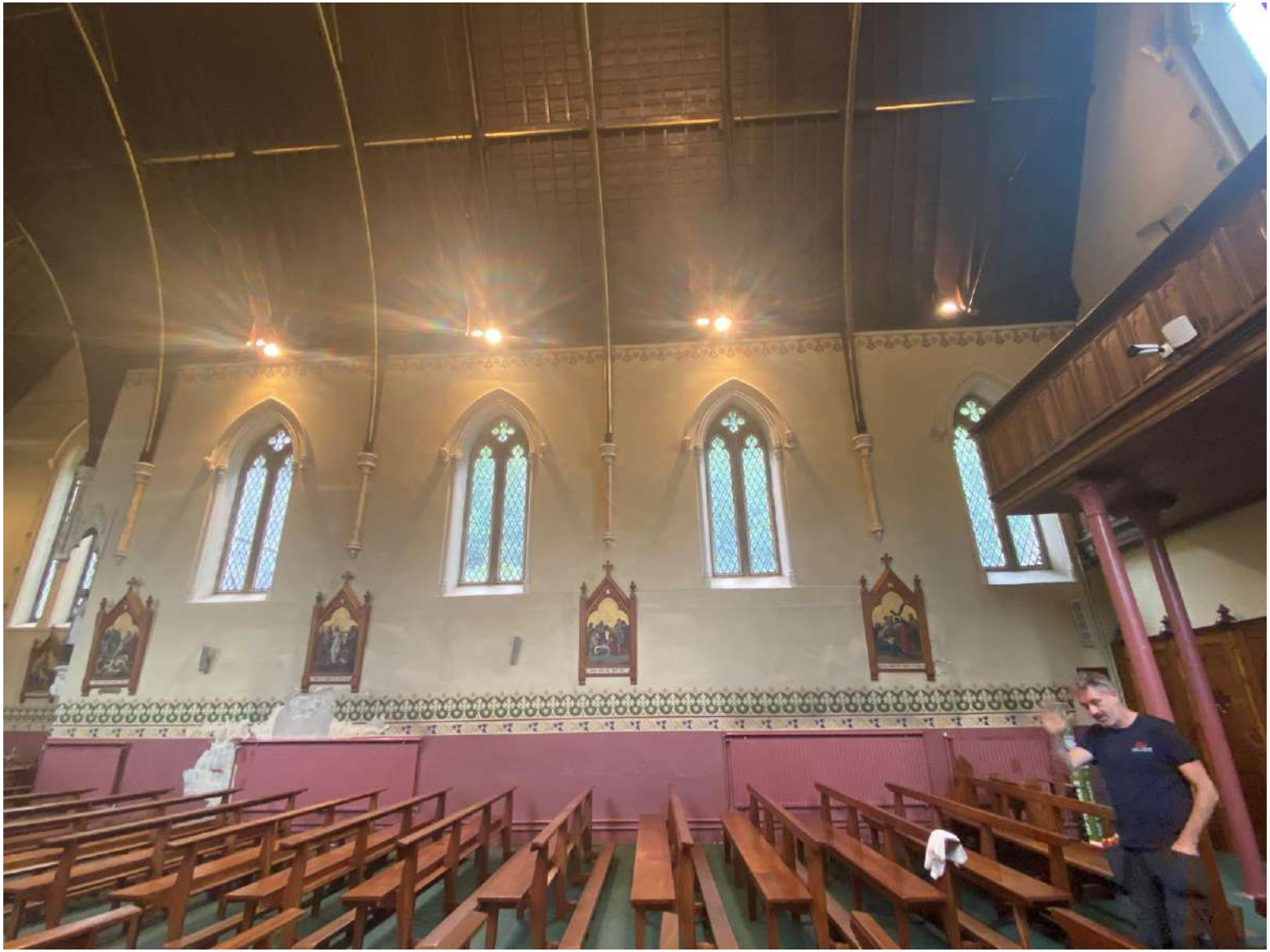
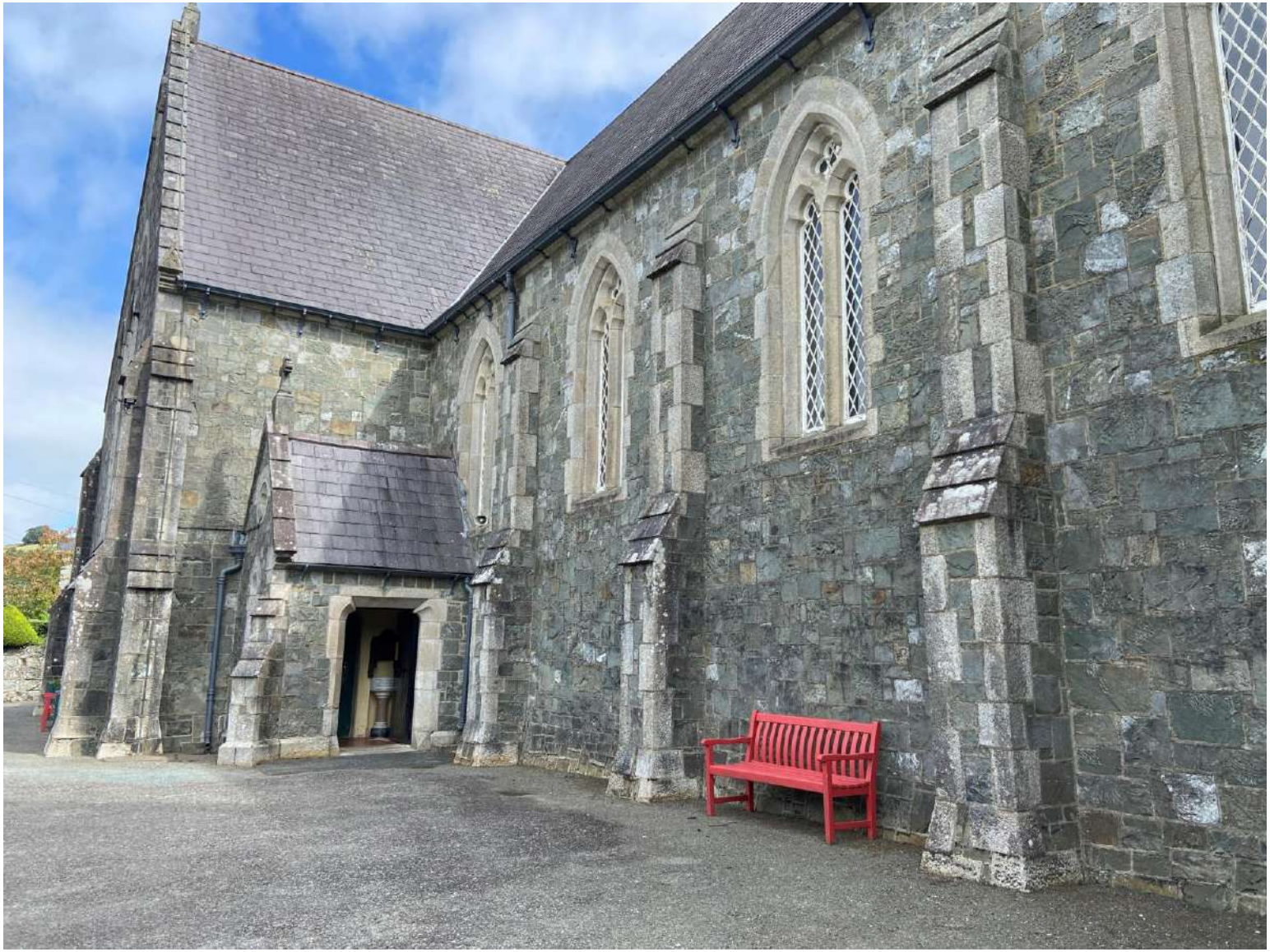
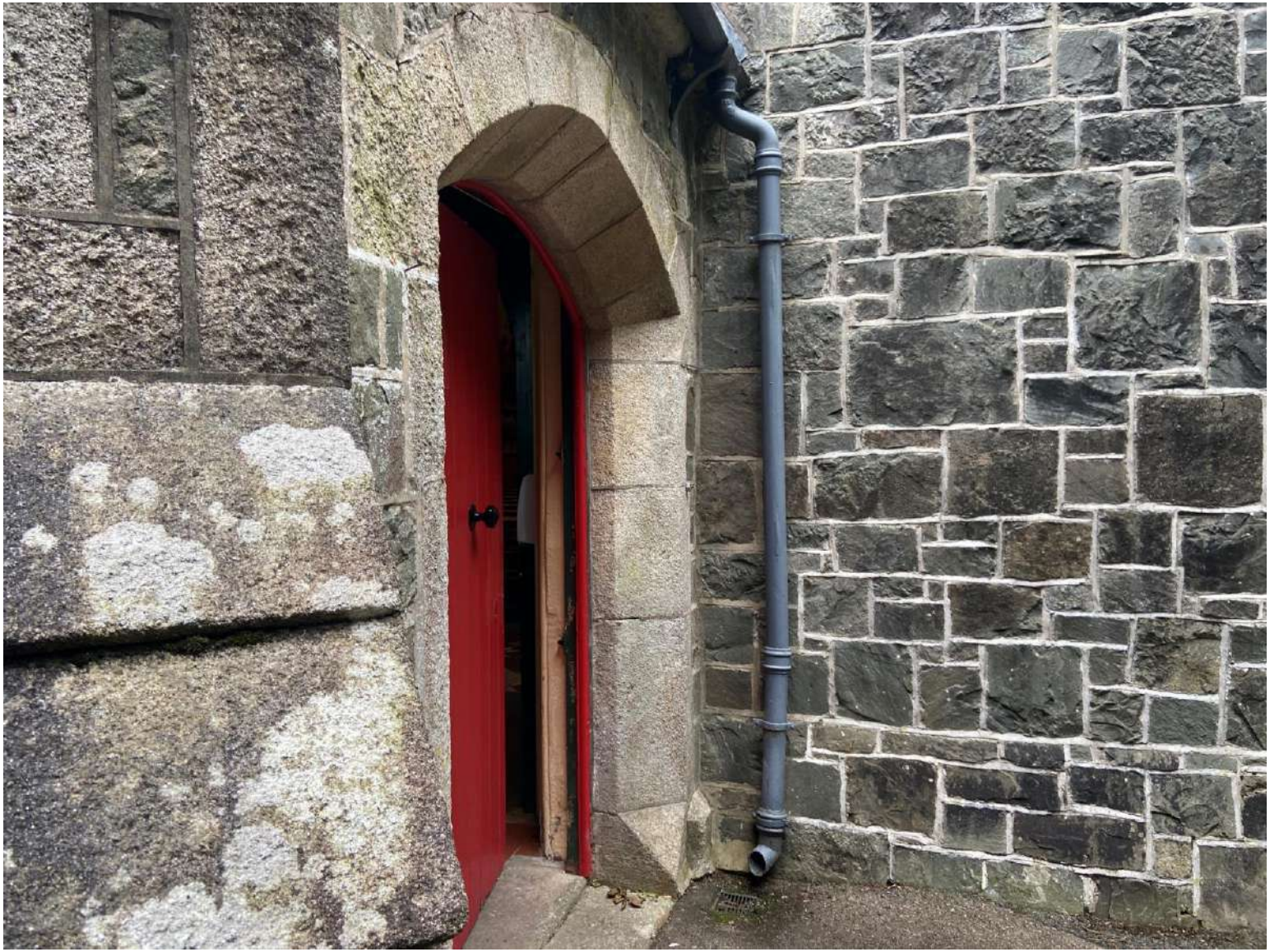
GOSPEL APSE
WEEK-DAY MASS
EPISTLE
APSE
CENTRE NAVE
EPISTLE
GOSPEL NAVE
SPOTS APSE
CONFESSION
SHRINES & P.A.
RADIO MIC
ROADSIDE
PORCH LTS
INSIDE & OUT









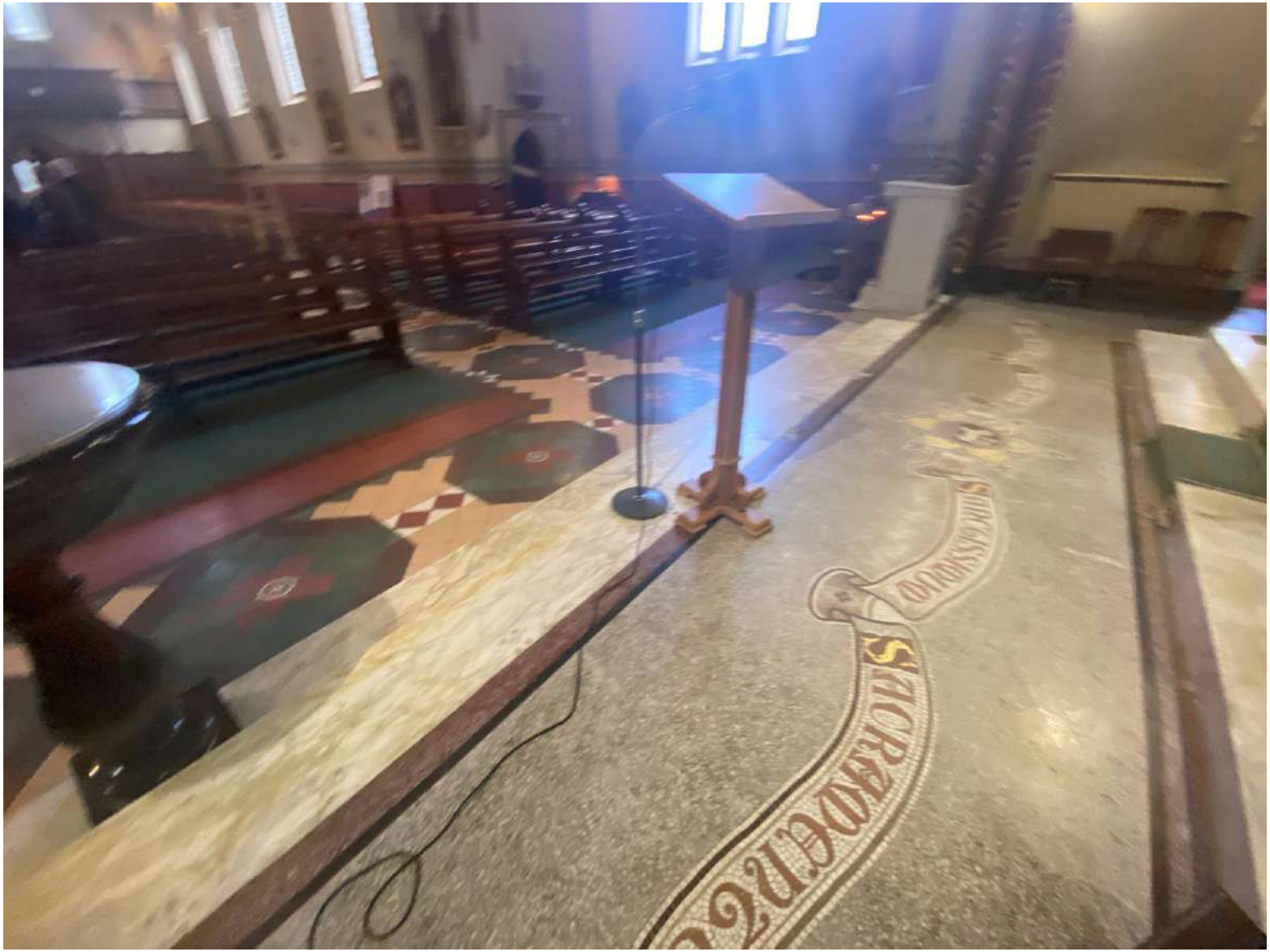



HIGH FLOODLIGHTS EAST
& ROADSIDE FLOODLIGHTS
Timed on/off
Constant off
Constant on

TOWER LIGHTS
INSIDE & OUT

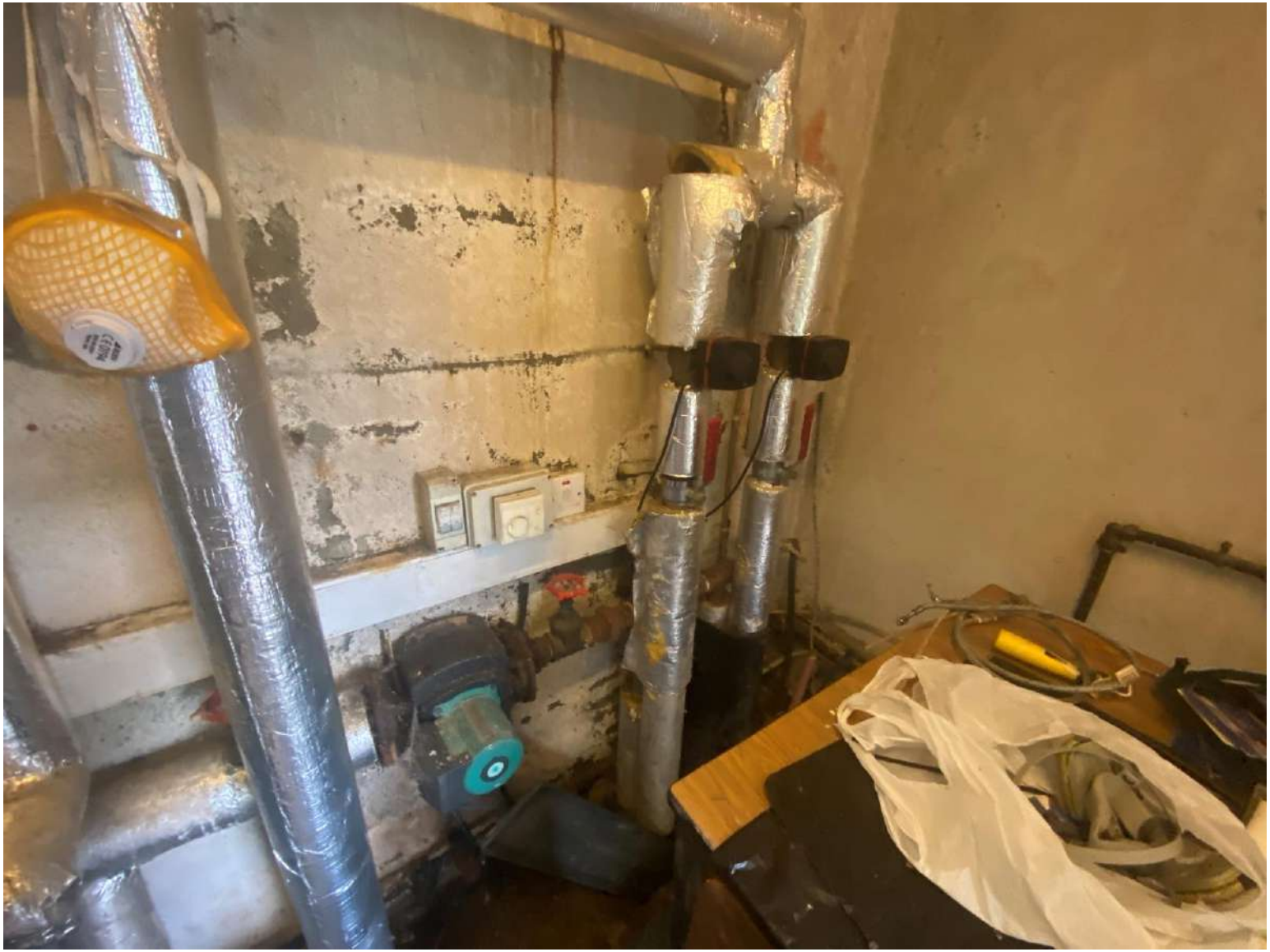

ERECTED 186


Dulux Gates




SACRISTY
CHAIR
E.
G.
GOSPEL APSE
WEEK-DAY MASS
EPISTLE
APSE
CENTRE NAVE
EPISTLE
GOSPEL NAVE
SPOTS APSE
CONFESSION
SHRINES & P.A.
RADIO MIC
ROADSIDE
PORCH LTS
INSIDE & OUT


FIREBIRD




NO MATCHES
NO SMOKING
NO NAKED LIGHTS


NO MATCHES
NO SMOKING
NO NAKED LIGHTS

Brendan Merry & Partners
Chartered Quantity Surveyors & Project Managers

SINCE 1968
CELEBRATING
50 YEARS

ORDER OF MAGNITUDE COST ESTIMATE NO. 1

SS MARY & PATRICK'S CHURCH,

AVOCA, CO. WICKLOW

23/1372
29th September 2023

1. INTRODUCTION

1.1 The purpose of this report is to provide an indication of the magnitude of construction costs likely to be incurred for the proposed Refurbishment Works to the SS Mary & Patrick's Church, Avoca, Co. Wicklow, at prices current in September 2023.

2. INFORMATION

This Order of Cost Estimate is based on the following information: -

2.1 Fitzgerald Kavanagh & Partners Condition Assessment & Overview of Proposed Interventions issued September 2023.

2.2 Fitzgerald Kavanagh & Partners Drawing Nos. 18-32-SV-200 Existing 100 Site, 200 GF, 201 RF, 300 AA, 301 BB, 302 CC DD and 400-402 Elevations.

2.3 JN & G Traynor & Partners Report on Existing Building Service Installations dated 1st September 2023 including Outline Budget Costings for proposed Mechanical and Electrical Works.

2.4 Site Visit by Brendan Merry & Partners (Damien Morgan & Ferdia Doherty) on Tuesday, 26th September 2023.

2.5 Outline Specification as set out in detailed breakdown in Appendix 1.

3. ORDER OF COST ESTIMATE

Based on the above information and subject to the exclusions set out in Section 4, the cost of the project is estimated at **€1,905,000**, inclusive of Value Added Tax and composed as follows:-

		€
3.1	Proposed Works in relation to Climate & Ventilation	107,000
3.2	Proposed Works to Exterior	256,000
3.3	Proposed Works to Interior	277,000
3.4	Proposed Mechanical and Electrical Works	456,000
3.5	Allowance for builders work in connection with the above	64,000
3.6	Preliminaries and Insurances (including scaffolding)	225,000
		1,385,000
3.7	Construction Contingency	100,000
3.8	**Projected Construction Cost (Excluding V.A.T.)**	**1,485,000**
3.9	Value Added Tax (13.5%)	200,000
3.10	Allowance for Design Team Fees (12%) Including V.A.T. (23%)	220,000
	Projected Total Cost	**€1,905,000**

A detailed breakdown of Items 3.1-3.6 has been included in **Appendix 1**.

4. EXCLUSIONS

This Order of Cost Estimate excludes any costs arising from the following: -

4.1 Loose Furniture and Equipment.

4.2 Planning Contributions.

4.3 Planning, DAC and Fire Certificate Fees.

4.4 Public Utility Contributions.

4.5 Special requirements of Planning Permission, DAC Certificate or Fire Officer.

4.6 Changes in prices occurring after September 2023.

APPENDIX 1

Bill Ref.	Description	Quantity	Unit	Rate	Total
	Recommendations				
	Climate & Ventilation				
	Site Works to Reduce Damp				
1A	Carry out an underground drainage survey to establish the underground drainage system, including position and invert levels, and to identify the condition of same. This should be recorded on a site survey drawing.	1.00	item	5,000.00	5,000.00
1B	Carry out all repairs / replacement of damaged sections of underground drainage system identified in survey report, including assessment of capacity of ground water gulley's to ensure they are sized appropriately to effectively take water away from building. Investigate ground water level and profile of foundations: form 2 no. trial pits (one within tarmac surface and one within concrete surface – exact location TBA) to approx. 900mm deep, to ascertain ground water levels.	1.00	item	10,000.00	10,000.00
1C	Trial Pits Carefully remove hardstanding surface in proximity to the church to the entire perimeter of the building. This includes breaking out the tarmacadam surface and associated subsurface to a width of 1.2m and to a depth of 0.8m, without undermining existing building foundations or disturbing the original building fabric. The existing surface to the north and north-east area of the church is a slightly raised concrete strip between buttresses which should be carefully removed to match details above.	2.00	no	1,500.00	3,000.00
1D	breaking out the tarmacadam surface	149.00	m2	20.00	2,980.00
1E	subsurface Install a “French drain” – 150mm diameter terracotta perforated pipe laid in a well graded granular fill (20-25mm washed and crushed stone) and wrapped in a geotextile membrane filter fabric. The pipe is to be laid at falls of 1 in 80mm and connected to existing soak away.	112.00	m3		Incl.

2A	Terracotta Pipe	161.00	m	90.00	14,490.00
2B	Well Graded Granular Fill	4.00	m3		Incl.
2C	Geotextile Membrane	149.00	m2		Incl.
	Build the ground level back up with compacted granular fill laid in 150mm sections.				
2D	Infilliing	90.00	m3	30.00	2,700.00
	Allow for a 150mm deep and 1200mm wide border of pea gravel as finished surface, laid to a fall of 1:40 falling away from the building, or as best possible to match existing tarmac ground level to remaining area of church forecourt. Allow for reinstatement of tarmac surface locally as required in proximity to new gravel surface.				
2E	Allow for a 150mm deep and 1200mm wide border of pea gravel finished surface	23.00	m3	100.00	2,300.00
2F	Allow for tarmac surface	149.00	m2	40.00	5,960.00
	Allow for fitting new ACO linear channel drain at all entrance doorways, width to match doorway, connecting into existing drainage system, to manage surface water.				
2G	ACO linear channel drain	6.00	m	300.00	1,800.00
	Thoroughly flush out the whole of the installation with clean water to remove silt and debris immediately before handover.				
2H	Thoroughly flush out the whole of the installation with clean water to remove silt and debris immediately before handover.	1.00	item	1,500.00	1,500.00
	Improve Ventilation				
	Restore opening section of window to existing windows on each side of the transept to allow window to be fully openable when required and to provide natural cross ventilation through this space. New ironmongery and pulley system required to allow window to be opened by persons at ground level.				
3A	800mm x 5600mm high, existing window exists but is not operational. Ref W-G09, 25	2.00	no	1,000.00	2,000.00

	Allow for modifying 4 no. existing side windows to Nave (two on each side) to allow window to have a new openable bottom hung casement section formed in the base of the window to introduce natural ventilation to the church, such as that seen in the photo on the right-hand side. New ironmongery and pulley system required to allow window to be opened by persons at ground level.				
3B	1150mm x 3215mm high, modify existing window which currently doesn't have openable section. Ref W-G13, 15, 19 & 21 / Ref W-G12, 14, 20 & 22	4.00	no	4,000.00	16,000.00
	Allow for modifying 2 no. existing windows to Sacristy to allow window to have a new openable bottom hung casement section formed in the base of the window to introduce natural ventilation to the Sacristy, such as that seen in the photo on the right-hand side.				
3C	970mm x 1280mm high, modify existing window which currently doesn't have openable section. Ref W-G02	1.00	no	2,000.00	2,000.00
	Allow for replacing the exterior secondary glazing system (Storm Glazing) to a shorter profile to all windows in the belltower to allow the openable bottom section of the interior glazing system to function and provide natural ventilation to the belltower.				
3D	490mm x 2275mm high, Ref W-G01	1.00	no	1,500.00	1,500.00
3E	1400mm x 2600mm high, Ref W-F04, W-F05 & W-F08	3.00	no	2,500.00	7,500.00
4A	1200mm x 3000mm high, Ref W-S01, W-S02 & W-S03	3.00	no	2,500.00	7,500.00
	Within the east, west, south entrance porches, bell tower porch, and sacristy porch, allow for modifying the existing external solid sheeted timber door in each location to accommodate a metal lourved vent grille to the low-level area of the door, approx. size 600x300mm, to introduce natural ventilation to these areas. Restore and redecorate door on completion.				
4B	Sacristy Porch Door, Ref G-D01	1.00	no	450.00	450.00
4C	North East Porch Door, Ref G-D05	1.00	no	450.00	450.00
4D	South Porch Door, Ref G-D07	1.00	no	450.00	450.00
4E	Bell Tower Door, Ref G-D09	1.00	no	450.00	450.00

4F	North West Porch Door, Ref G-D11	1.00	no	450.00	450.00
	Allow for restoring all remaining windows by cleaning down thoroughly including stone surrounds where fungal growth was noted to the interior in some locations. If possible, trickle vents should be incorporated				
	Alter Windows				
4G	Gable End Stained Glass Windows 3150mm x 6775mm high, Ref W-G05	1.00	no	1,000.00	1,000.00
4H	300mm x 2260mm high, Ref W-G06, W-G07	2.00	no	1,000.00	2,000.00
4J	630mm x 620mm high, Triangular shaped window, Ref W-F01, W-F02	2.00	no	1,000.00	2,000.00
	North West Porch				
4K	315mm x 1275mm high, ref W-G23	1.00	no	1,000.00	1,000.00
4L	610mm dia, circular cross shaped window, ref W-F03	1.00	no	1,000.00	1,000.00
	Crossing Windows				
4M	1000mm x 1080mm high, Triangular shaped window, ref W-F07, W-F11, W-F11, W-F12	4.00	no	1,000.00	4,000.00
	Nave Windows				
5A	1000mm x 1080mm high, Triangular shaped window, ref W-F07, W-F11, W-F11, W-F12	1.00	no	1,000.00	1,000.00
	Alter Windows				
5B	1000mm x 1080mm high, Triangular shaped window, ref W-F07, W-F11, W-F11, W-F12	1.00	no	1,000.00	1,000.00
5C	During works, if other opportunities arise where additional natural ventilation can be achieved, such as provision for wall vents or roof vents, these should be considered and incorporated where practicable.	1.00	item	5,000.00	5,000.00

Exterior

Repairs to Roofs

	As observed from the height-for-hire there is buddleia growth between the slates and beneath the flashing on the high-level slated roof on the south-west corner abutting the belltower should be addressed. The slates in this area should be carefully stripped , approx. 2m wide section, from gutter to ridge, to allow for removal of the buddleia growth, treatment of area with a biocide wash, reinstating the slates in this area and renewing the flashing detail completely to the abutment with the belltower and parapet wall to upper areas with new lead soakers and lead side flashing complete as per LSA recommendations.				
5D	Removal of Slates	21.00	m2	400.00	8,400.00
5E	Provisional - allowance for broken slates - 25%	6.00	m2		Incl.
5F	Spraying of Herbicide	1.00	item		Incl.
5G	Biocide Wash	21.00	m2		Incl.
5H	Provisional - permeable membrane	21.00	m2		Incl.
5J	Slate Reinstatement	21.00	m2		Incl.
5K	Renew Flashing	9.00	m		Incl.
	Allow for re-bedding of ridge tiles complete to nave and transepts, following remedial works to the existing lightening protection system, which has damaged the existing ridge tiles, so it is reasonable to assume a 50% replacement requirement.				
6A	Re-bed Ridge Tiles	55.00	m	100.00	5,500.00
6B	Allowance for Broken Ridge Tiles (50%)	28.00	m	150.00	4,200.00
	Renew lead valley gutters completely to all low-level roofs, including new substrate, on new firring pieces, to new falls with new lead finish including counter flashing and lead to outlet, all as per LSA recommendations.				
6C	lead valley	52.00	m	250.00	13,000.00
	Renew the lead flashing detail completely to all low-level roofs, which is unsuitable, and provide new lead soakers and lead side flashing complete as per LSA recommendations.				
6D	Renew Lead Flashing	3.00	m	250.00	750.00
6E	Lead Soakers	8.00	m	250.00	2,000.00

6F	Side Flashngs	28.00	m	250.00	7,000.00
	Provide new leaf guard fitted to all outlets				
6G	Gulleys	11.00	no	350.00	3,850.00
6H	Hoppers	3.00	no	350.00	1,050.00
	Repairs to Rainwater Goods				
	Carefully remove, repair off site, and redecorate all existing cast-iron rainwater goods (gutters, downpipes, hopper heads and brackets). Allow for providing temporary uPVC system in the interim period.				
6J	Gutters	88.00	m	120.00	10,560.00
6K	Downpipes	76.00	m	120.00	9,120.00
6L	Hopper Heads	3.00	no	200.00	600.00
7A	Allowance for making good to all brackets	1.00	item		Incl.
7B	Temporary uPVC System	1.00	item		Incl.
	In the short term, essential maintenance works should be undertaken to remove vegetation from all gutters and flush out thoroughly all gutters and downpipes. All gulley traps should be jetted and flushed out and reviewed to ensure a grille is correctly fitted at the discharge point, to better manage surface water. A regular inspection programme should be implemented to check all rainwater goods, including regular clearing out of rainwater goods and periodic redecoration of ironwork to inhibit corrosion.				
7C	Maintenance	1.00	item	5,000.00	5,000.00
	Facades				
	Carry out investigation works to determine the extent of damage, if any, of the original bedding mortar to the exterior walls, which was identified as a concern by FKP & Shane Nolans in 2018 due to it being potentially extremely deteriorated. Allow for carrying out a series of tests, in 6 no. different locations around the external perimeter of the building (locations TBA) to assess the bedding mortar condition. Depending on results, if considerably deteriorated, it may be necessary to inject the bedding mortar with a stabiliser throughout.				

7D	Testing of Bedding Mortar	6.00	no	400.00	2,400.00
7E	Inject Stabiliser	1.00	item	5,000.00	5,000.00
	Carefully rake out to a depth of minimum 20mm all the cementitious mortar (all areas excluding the north façade behind the alter and the belltower), treat the facades with a biocide wash prior to re-pointing, and repoint the façade with a natural hydraulic lime, either 'St Astier' or 'Roundtower' or other similar if approved by the Conservation Architect. A suitable specification would be a 1-part lime: 2.5-part sand mix, using NHL 3.5 lime and Wexford well graded sand, with a flush finish joint as seen on the north façade.				
8A	Rake out Mortar	886.00	m2	45.00	39,870.00
8B	Biocide Wash	886.00	m2	25.00	22,150.00
8C	Repoint with Lime	886.00	m2	90.00	79,740.00
	As the belltower does not contain public worship space, the remedial works to same can be undertaken at a separate time to those of the main church if desirable from a finance point of view, although the works remain necessary to address the deterioration of the building fabric. Carefully rake out to a depth of minimum 20mm all the cementitious mortar to the belltower façade and pyramidal spire roof, treat all areas with a biocide wash prior to re-pointing, and re-point with a natural hydraulic lime, either 'St Astier' or 'Roundtower' or other similar if approved by the Conservation Architect. A suitable specification would be a 1-part lime: 2.5-part sand mix, using NHL 3.5 lime and Wexford well graded sand, with a flush finish joint as seen on the north façade.				
8D	Rake out Mortar; to walls	209.00	m2	45.00	9,405.00
8E	Rake out Mortar; to roof	17.00	m2	45.00	765.00
8F	Biocide Wash	226.00	m2	25.00	5,650.00
8G	Repoint with Lime	226.00	m2	90.00	20,340.00
	Interior				
	General				

9A	Before works commence; submit proposals to protect all Stations of the Cross and other wall mounted artefacts such as statues in high level niches, which should be taken down and carefully stored for re-erection on completion of works. Adequate protection to all areas to be provided throughout.		note		Incl.
9B	The following upgrades appropriate to traditional buildings, should be undertaken, to address rising damp and to remove impermeable unsuitable materials, which are causing the internal fabric to deteriorate;		note		0.00
	Repairs to Roof Structure & Ceiling				
	No works proposed to roof structure or ceiling at this stage. During the subsequent stages of the project, consideration could be given to assessing whether suitable thermal upgrades at ceiling / roof level could be readily accommodated which could improve the thermal performance of the roof, as heat loss through roofs is typically estimated to be 25% of the heat loss of a structure.				
9C	Assess Roof Structure	1.00	item		**Excl.**
9D	Allowance for Thermal Upgrades	1.00	item		**Excl.**
	At this time FKP were unable to determine if any works are required to the roof or ceiling area of the belltower as this area was not accessible due to the health and safety risk posed by the access stair.				
9E	Provisional - Allowance for works to roof and ceiling	1.00	item		**Excl.**
	Repairs to Walls: Interior face of all external walls to Nave & Transepts (excluding wall bounding Alter)				
	Carefully strip internal plaster finish back to bare rubble stone background to full height of walls. Temporarily disconnect all radiators and retain pipework where possible, in the instance where the existing heating system is not being replaced in tandem with the plaster repair works.				
10A	Strip Plaster to Rubble	666.00	m2	25.00	16,650.00
10B	Disconnect Radiators	1.00	item		Incl.
10C	Retain Pipework	1.00	item		Incl.

	Allow for retaining the decorative plaster details which are apparent to door and window surrounds and to statue niches. Should detail be found to be missing or minor damaged caused during the works, the detail should be replicated in cast plaster as required.				
10D	Retaining Decorative Plaster; to Doors	27.00	m		Incl.
10E	Retaining Decorative Plaster; to Windows	275.00	m		Incl.
10F	Retaining Decorative Plaster; to Niches	7.00	no		Incl.
10G	Allowance for Replicating Detail	1.00	item	5,000.00	5,000.00
	A structural assessment will ensue once walls are exposed to ensure substrate is sound, at this stage allow for helibar steel reinforcement bars at 10 no. locations, 900mm length in matching mortar beds to crack locations. Allow for applying a lime based breathable levelling coat to the inside face of the external walls to dub out any voids and secure any loose masonry, to a depth of 20mm. Finish wall surface in flat natural hydraulic lime plaster, in 3 coat build-up using NHL 2 lime and lime putty finish. The plaster finish should match the existing finish in these areas which is a random ashlar pattern. Should finances restrict this finish being undertaken, a lined-and-ruled finish should be adopted, as seento the walls bounding the Alter. Works to be undertaken by an experienced specialist.				
11A	900mm Helibar Steel Reinforcment	10.00	no	350.00	3,500.00
11B	Lime based Levelling Coat; 20mm	666.00	m2	120.00	79,920.00
	Allow new plaster finish to cure and wall to dry out prior to re-decoration. There is a benefit to allowing a duration of 12-18months for the structure to dry out, before completing the re-plaster works, should this be permissible. Re-decorate using a breathable mineral type silicone-based paint. Stencil detail not suggested to be replicated as this is a modern addition, however a dual-paint colour scheme could be considered, low-level and high-level of the walls, in reference to this detail.				
11E	Breathable Silicone Based Paint	666.00	m2	30.00	19,980.00

	Repairs to Walls: Interior face of all walls bounding Alter				
	Allow for carrying out sampling, in 3 no. different locations (locations TBA), and specialist analysis of the plaster sample, to determine the composition of the internal plasterwork as it is unclear if this is a lime or cement / gypsum-based finish.				
12D	Allowance for Sampling	3.00	no	1,000.00	3,000.00
	Should the sample be found to contain cement or gypsum, it would be advisable to remove and replaster in a breathable lime plaster. Specification and methodology as outlined above, with a lined-andruled finish to match the existing finish seen in this location. Re-decorate as outlined above.				
13A	Removal of Cement/Gypsum Finish	213.00	m2	25.00	5,325.00
13B	Lime Plaster	213.00	m2	120.00	25,560.00
13C	Breathable Silicone Based Paint	213.00	m2	30.00	6,390.00
	The 4 no niches recessed into the east wall should be re-plastered, taking care to protect the decorative plaster details forming the openings. Specification and methodology as outlined above, with a smooth flat finish to match the existing finish seen in this location. Re-decorate as outlined above.				
13D	Replastering 4 no. Niches	4.00	no	750.00	3,000.00
13E	Breathable Silicone Paint	4.00	no	250.00	1,000.00
	Repairs to Walls: Sacristy & Adjoining Porch				
13F	Works to be undertaken following remedial repairs at roof level to address water ingress and ensuring adequate time to allow interior to dry out.		note		0.00
	Strip internal plaster finish to adjoining porch complete and to the south interior wall of the Sacristy adjoining the porch where dry rot is present.				
13G	Stripping of Plaster	17.00	m2	25.00	425.00

	Treat the area of rot by removing the fruiting bodies and visible spores. Clean all wall and ceiling surfaces to remove growth. Should any timber be found to be present in these locations they will require a structural assessment to determine if they require replacement. Treat area complete with a fungicidal microemulsion spray treatment.				
13H	Removal of Spores and Fruiting Bodies	1.00	item	7,500.00	7,500.00
14A	Structural Assessment to Timber	1.00	item		0.00
14B	Spray with Fungicidal Microemulsion Treatment	1.00	item		0.00
	Replaster areas as outlined above, lined-and-ruled finish to match the existing finish in this location.				
14C	Replaster Walls, with lined and ruled finish	17.00	m2	150.00	2,550.00
	Re-decorate as outline above all walls and ceilings in the sacristy and adjoining porch.				
14D	Wall Finishes	55.00	m2	30.00	1,650.00
14E	Ceiling Finishes	16.00	m2	30.00	480.00
	Repairs to Walls: North-West, North-East and South Porches				
14F	Works to be undertaken following remedial repairs at roof level to address water ingress and ensuring adequate time to allow interior to dry out.		note		0.00
	Remove the dry lining in these areas to allow for further investigation of wall condition behind				
	North-West Porch				
14G	Removal of Dry Lining	13.00	m2	20.00	260.00
	North-East Porch				
14H	Removal of Dry Lining	7.00	m2	20.00	140.00
	South Porch				
14J	Removal of Dry Lining	23.00	m2	20.00	460.00

	Strip internal paint finish to porches complete. During this process, take care to protect and retain the decorative plaster details which are apparent to door and window surrounds and to niches. Should detail be found to be missing or minor damaged caused during the works, the detail should be replicated in cast plaster as required.				
	North-West Porch				
15A	Strip Paint	24.00	m2	15.00	360.00
15B	Painting	24.00	m2	30.00	720.00
15C	Allowance for Replacement Plaster	1.00	item	2,880.00	2,880.00
	North-East Porch				
15D	Strip Paint	24.00	m2	15.00	360.00
15E	Painting	24.00	m2	30.00	720.00
15F	Allowance for Replacement Plaster	1.00	item	2,880.00	2,880.00
	South Porch				
15G	Strip Paint	40.00	m2	15.00	600.00
15H	Painting	40.00	m2	30.00	1,200.00
15J	Allowance for Replacement Plaster	1.00	item	4,800.00	4,800.00
	Carry out localised re-plastering where boast and saturated, which appears to be limited to low level around the doorways. Replaster areas as outlined above, with a smooth flat finish to match the existing finish seen in this location.				
15K	Allowance for Replastering Areas around Doorways	1.00	item	3,000.00	3,000.00
	Re-decorate as outlined above all walls.				
15L	Allowance for Redecorating Areas	1.00	item	2,000.00	2,000.00
	Repairs to Walls: Belltower				
	Remove timber access stair within belltower, from Choir Balcony level up to top, as it is decayed and requires removal to facilitate remedial works to the walls. Allow for reinstatement of similar timber stair on completion of works to allow for safe access and maintenance to the upper areas of the belltower.				
15M	Removal of Stairs	1.00	item	1,250.00	1,250.00

	Carefully strip internal plaster finish back to bare rubble stone background to full extent of walls. There is a benefit to not carrying out the re-plastering works straight away, rather allowing a duration of 12-18months for the structure to dry out, before completing the re-plaster works. This may be feasible in this area as it is a non-worship area. It is worth considering leaving the internal walls of the belltower as exposed stone and not re-instating a plaster finish and this will aid the breathability of the structure and aid the natural drying-out process of the walls.				
16A	Strip off Internal Finish	212.00	m2	25.00	5,300.00
16B	Allow for drying out (12 - 18 months)	1.00	item		0.00
16C	Provisional - re-plaster	212.00	m2	120.00	25,440.00
	Clean all wall surfaces to remove growth. Should any timber be found to be present in these locations they will require a structural assessment to determine if they require replacement. Treat area complete with a fungicidal microemulsion spray treatment				
16D	Clean Walls	212.00	m2	20.00	4,240.00
16E	Provisional - allowance for replacing timber	1.00	item	3,000.00	3,000.00
16F	Fungicidal Microemulsion Treatment	1.00	item	3,000.00	3,000.00
	A structural assessment will ensue once walls are exposed to ensure substrate is sound, at this stage allow for helibar steel reinforcement bars at 5 no. locations, 900mm length in matching mortar beds to crack locations. Allow for applying a lime based breathable levelling coat to the inside face of the external walls to dub out any voids and secure any loose masonry, to a depth of 20mm. Finish wall surface in flat natural hydraulic lime plaster, in 3 coat build-up using NHL 2 lime and lime putty finish. The plaster finish should match the existing finish in these areas which is a smooth flat finish. Works to be undertaken by an experienced specialist.				
17A	900mm Helibar Steel Reinforcement Bars, to crack locations	5.00	no	150.00	750.00
17B	20mm deep Lime based Levelling Coat	212.00	m2	120.00	25,440.00

17C	Plaster Finish; Flat natural hydraulic lime plaster, in 3 coat build-up using NHL lime and lime putty finish. To match previous existing finish Allow new plaster finish to cure and wall to dry out prior to re-decoration. Re-decorate using a breathable mineral type silicone-based paint.	212.00	m2		Incl.
17D	Paint	212.00	m2	30.00	6,360.00
	Repairs to Floor				
17E	No works proposed to internal floor finish at this stage				**Excl.**
	Repairs to Windows				
17F	Works to windows captured in Section 3.1 above.				**Excl.**
	Mechanical Installation				
19A	New Underseat Radiator Heating Installation Utilising Existing Central Boiler Plant	1.00	Item	90,000.00	90,000.00
19B	Allowance for Minor Works to Hot & Cold Water Services	1.00	Item	5,000.00	5,000.00
19C	Allowance for builders work in relation to above works	1.00	Item	20,000.00	20,000.00
	Electrical Installation				
21A	Preliminaries, Removal of Existing, Contingency, Manuals, etc.	1.00	Item	18,000.00	18,000.00
21B	Relocation of ESB Networks Supply & Metering, Switchgear, Electrical Power, Distribution, General Services & Motive Power	1.00	Item	55,000.00	55,000.00
21C	Internal & External Lighting incl Emergency Lighting	1.00	Item	155,000.00	155,000.00
21D	Lighting Controls	1.00	Item	35,000.00	35,000.00
21E	Fire Alarm	1.00	Item	30,000.00	30,000.00
21F	Intruder Alarm	1.00	Item	8,000.00	8,000.00
21G	CCTV System	1.00	Item	15,000.00	15,000.00
21H	Lightning Protection Works	1.00	Item	10,000.00	10,000.00
21J	Sound System	1.00	Item	35,000.00	35,000.00
21K	Allowance for builders work in relation to above works	1.00	Item	40,000.00	44,000.00
	Preliminaries and Insurances				
23A	Allowance	1.00	Item	225,000.00	225,000.00
Subtotal					**1,385,000.00**

Brendan Merry & Partners

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