

CARLOW CENTRAL LIBRARY, TULLOW STREET, CARLOW

Part 8 Submission Architectural Heritage and Conservation Report



Former Presentation Convent now occupied by Carlow Central Library

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	4
1 INTRODUCTION	7
2 HISTORY	8
2.1 Presentation Convent in Carlow	8
2.2 Historical Maps	10
3 ARCHITECTURAL RECORD.....	12
3.1 Introduction to Inventory	12
3.2 Setting	12
3.3 Composition	12
3.4 External Inventory	12
3.5 Internal Inventory	15
4 STATEMENT OF SIGNIFICANCE	22
4.1 Appraisal of the Architectural Heritage of the Former Presentation Convent.....	22
4.2 Appraisal of the Architectural Heritage of the Modern Library Extension	24
4.3 Appraisal of the Museum Building	24
4.4 Appraisal of the Site	24
4.5 Group Significance	25
5 EXTERNAL CONDITIONS	29
5.1 Exterior Condition Survey:	29
5.2 Photograph Record of Condition of Roof and Exterior	31
6 EXTERNAL RECOMMENDATIONS.....	35
6.1 Roof	35
6.2 Elevations	35
6.3 Windows.....	36
6.4 Front Door	37
6.5 Front Railings.....	37
6.6 Coal Chute to Basement.....	37
7 INTERNAL CONDITIONS.....	38
7.1 Floors:	38
7.2 Skirting Boards:	38
7.3 Walls:	38
7.4 Ceilings:	38
7.5 Primary Staircase.....	38
7.6 Secondary Staircase.....	38
7.7 Photographs of Internal Issues	39
8 INTERNAL RECOMMENDATIONS	44
8.1 Basement:.....	44
8.2 Tiled Floors of Entrance Hall and Stairhall:	44
8.3 Principal Staircase:.....	44
8.4 Internal Walls:.....	44
8.5 Sash Windows	44
8.6 Granite Tracery Windows and Leaded Lights	44
8.7 Insulation.....	44
9 CONSERVATION SPECIFICATIONS	45
9.1 Conservation Methodology.....	45
9.2 Conservation Best Practice	45
9.3 Drawings.....	45
9.4 Sample Panels & Workmanship	45
9.5 Heritage Induction	46
9.6 Supervision & Personnel	46
9.7 Materials & Workmanship	46
9.8 Weather	46
9.9 Safety	47
9.10 Signage	47

9.11	Sequence of Works	47
9.12	Protection of Historic Fabric	47
9.13	Scaffolding	48
10	EXTERNAL SPECIFICATIONS.....	49
10.1	Specified Products	49
10.2	Biological Growth	49
10.3	Roof	49
10.4	Chimney Repairs	60
10.5	Removal of Render from Elevations.....	60
10.6	Re-Rendering of All Elevations.....	60
10.7	Ventilation Grilles	62
10.8	Redundant Fixings.....	62
10.9	Windows.....	62
10.10	Front Door	65
10.11	External Entrance Stone Steps.....	66
10.12	Works to Front Railings and Entrance Gates	66
11	INTERNAL SPECIFICATIONS	68
11.1	Removal of Later Additions & Redundant Items	68
11.2	Timber Floors	68
11.3	Subfloor Insulation on Ground Floor	69
11.4	Walls, Internal.....	70
11.5	Sash Windows	74
11.6	Granite Tracery and Leaded Light Windows.....	75
11.7	Doors, Internal - Refurbishment of Historic Doors	75
11.8	Timber Joinery.....	76
11.9	Staircase.....	77
11.10	Fireplaces.....	77
11.11	Cleaning of Windows.....	77
12	ARCHITECTURAL HERITAGE IMPACT ASSESSEMENT	78
12.1	Introduction	78
12.2	Architectural Drawings	78
12.3	Impact Assessment of Proposed New Library Extension	78
APPENDIX 1: INVENTORY PHOTOGRAPHS		86
APPENDIX 2: DRAWINGS		111

EXECUTIVE SUMMARY

Carrig Conservation International Ltd are the appointed conservation consultants within a multidisciplinary team led by architects Carr, Cotter, Naessens for the redevelopment of Carlow Central Library. The following report, prepared by Carrig on behalf of Carlow County Council, forms part of a Part 8 submission for the redevelopment of Carlow Central Library on Tullow Street. The primary objective of the report is to provide the client with a record of the extant structures, a condition assessment, and an appraisal of the potential impacts of proposed development.

Carlow Central Library occupies the former Presentation Convent on Tullow Street in Carlow town. In 1998, the former convent was renovated and a purpose-built library extension with bookstore was constructed to the rear of the historic building. Subsequently, in 2012 renovations were carried to the former convent chapel and early schoolrooms on College Street as part of the development of County Museum and Tourist Office.

This report documents the findings of a conservation survey that was carried out to assess the quality and importance of the former Presentation Convent and to evaluate its current condition and conservation needs. The exterior of the building was surveyed from ground level only whilst all spaces within the interior, including the basement and roof space, were accessed.

Summary of Conservation Needs:

1. The convent building is generally in good repair and is well maintained.
2. The convent building was extensively refurbished 1998 as part of the development of the library.
3. The roof, which is not the original, needs to be re-felted and re-slatted with natural slate. New rainwater goods are required for the front elevation, east and rear elevations. These much match the dimensions and profile of the original units on the west elevation. The original rainwater goods of the west elevation must be refurbished. New ventilation slates will need to be installed on the rear slope of the roof. Repointing and localised mortar repairs are required to the chimneystacks. Flaunching should be inspected and repaired, if necessary. New cowls should be provided to chimneypots. Flashings should be inspected and repaired, if necessary. In particular, flashing on the east chimney needs repair to halt ingress of water which has saturated an internal purloin.
4. The internal roof space should be cleared out and the existing fibreglass insulation should be replaced. New hygroscopic insulation batts should be provided and laid horizontally between joists. Water tanks and pipework must also be insulated. White mould, which has developed on roof timbers due to humidity, should be removed using a Borax solution. The space may need to be temporarily dehumidified during this process. A timber walkway should be installed over joists to allow for ease of access for future maintenance.
5. The eastern face of the eastern chimneybreast, seen from within the roof space, has a vertical crack. This can be repaired using the Helibar system as per the structural engineer's specifications. Brick repairs are also required to the south side of the east chimney to infill a void created on the removal of a purloin pad.
6. The exterior's cementitious render is too dense for its underlying masonry. It should be removed and replaced with a lime (Otterbein) render. The new render must be finished with refined ruled-and-lined scoring as per the existing. The decorative render surrounds to openings, string-courses and eaves corbels should be retained and previously painted surfaces should be repainted. A new string-course should be moulded to the east end of the façade where it is missing and mouldings damaged during the insertion of replacement rainwater goods should be repaired.
7. The coal chute at the basement's west end needs to be weathered from above. This process will require the temporary lifting of the public pavement on College Street.

8. There are no windows in the basement openings so new units will be required.
9. The principal stairs, which is ornate, is deflecting at its upper levels. The present suspension rods, which were installed to remediate this issue, are not adequately engaged and may need to be tightened from within the roof space to support the stairs under the guidance of the structural engineer. The non-original plasterwork to the walls at the top of the stairs is cracked and loose due to the deflection of the staircase. This area will need to be re-plastered with lime plaster. Some localised timber repairs may be carried out to the staircase.
10. The lift, which was inserted c.1998, disrupts the original layout of the building and impacts negatively on the flow between spaces on each floor. It should be removed to reinstate the integrity of the interior.
11. Once the lift is removed, the original ceiling and archway, concealed by the present suspended ceiling in the small storeroom to the north of the children's library, may be repaired and exposed.
12. Cracking at ceiling level and to arch-heads within the archive on the second floor indicate outward movement of the front elevation. The structural engineer will devise a repair strategy for this issue. The plasterwork, which is non original, will be renewed in lime plaster.
13. The historic building retains notable features such as door and window joinery, floor tiles, leaded light windows with cut-stone tracery, a well-designed staircase, and stone fireplaces. These features will be retained and refurbished if necessary.
14. The sash windows are generally in good condition but will require refurbishment and draft proofing. The space behind timber architraves and shutters may require an insulating render. Windows will be fitted with an appropriate draught-proof system.
15. The granite tracery windows with leadlight glass need to be refurbished by a stained glass craftsman. Joints will need to be raked and repointed with lime mortar. Some glass panes will need to be replaced as per existing. Wrought-iron bars will need to be treated and painted. Some lead comes may need to be repaired.
16. The present library extension to the rear of the building has impacted negatively on the former rear elevation. The architects' proposed design will provide for the rehabilitation of the character of this north-facing elevation.
17. We have not inspected woodwork or other parts of the structure that are covered, unexposed or inaccessible and we are therefore unable to report that any such part of the property is free from defect.
18. The subfloor area beneath the large children's reading room to the front of the ground floor will be insulated. Carpet, hardboard and floorboards will be lifted. Debris will be removed from the earth surface below. A layer of wood fibre insulation will be provided between joists, supported on 50mm x 25mm battens. Air gap to be retained between insulation and reinstated floorboards. All wall vents to the south elevation will be cleared to allow aeration of the subfloor.
19. The tiled floors of the entrance hall and stairhall are coated with a shellac varnish. Should the client choose to remove this, poultice rather than abrasive methods will be specified.

Overview of Principal Conservation Recommendations

1. The roof will be repaired on a like-for-like basis with the addition of new, breathable membrane and historically appropriate rainwater goods to the front and east. Existing sound slates will be retained and reused with replacement slates matching in size,

texture and colour. Slates will be nailed down with copper clout nails and stainless steel nail clips will not be used.

2. The cement render of the external elevations will be replaced with a new lime render which must be finished with refined ruled-and-lined scoring as per the existing. Decorative surrounds to openings, stringcourses, the corbelled cornice course and plinth course will be retained and repaired.
3. The existing windows and doors will be made good and draught-proofed.
4. The principal staircase will be strengthened by means of the remediation of the existing suspension system.
5. The lift and associated shaft will be carefully deconstructed so that the original layout of the Presentation Convent can be reinstated.
6. The repair of structural cracking and its causes at the second floor will be carried out on a minimum intervention basis.

Findings of Impact Assessment of Proposed Conservation Repair

1. The conservation works to repair the historic fabric and features have been designed to have a positive impact on the health and visual character structure.
2. The conservation works are intended to reverse previous inappropriate interventions to reveal the convent's original floor plan and historic character.
3. The works will halt water ingress and the deterioration of historic fabric, thus prolonging the life span of the structure.
4. The proposed changes adhere to the International conservation principles which include minimum intervention, maximum retention of features and fabric, using-like-for like materials.

Impact Assessment of Proposed Extension

1. The proposed development comprising a new library extension and modifications to the protected structure have been assessed for their potential impacts on the architectural heritage. Impacts of the development on the Convent, Museum, existing extension, rear site, presentation place, protected structures, streetscape and Architectural Conservation Area have been discussed below.

1 INTRODUCTION

This document is conservation report which has been prepared for a Stage 2a submission for the design and planning of a redevelopment of Carlow Central Library. The report comprises a written and photographic record of the building, a brief history, a statement of significance, a condition assessment and recommendations for repair of external and internal features and fabric. It also presents discussions on the potential impacts of the proposed development of Carlow Library.



Wall-mounted limestone plaque to the front elevation of the former Presentation Convent commemorating the arrival of the Presentation Sisters to Carlow in 1811. The Presentation Sisters occupied the site until 1989. In 1998, the convent building was converted for use as the Carlow Library and Archive.

2 HISTORY

2.1 Presentation Convent in Carlow

The Sisters of the Presentation of the Blessed Virgin Mary were established in Cork in 1775 by Nano Nagle with the intention of helping some of the most vulnerable in society. Focusing on education, and in particular the education of girls, the Order founded numerous schools throughout Ireland and around the world.

A commemoration plaque mounted on the front elevation of the library memorialises the three Sisters from the convent in Kilkenny who arrived in Carlow town in 1811 to establish a convent in the cellar of an existing house on the corner of Tullow Street. By the year 1819, numbers attending the school were such that a larger free school was set up in the basement of the chapel on College Street. Between 1837 and 1840, a new chapel was built, and gardens were laid out.

In 1873, a Cavan-born architect named William Hague provided designs for a new convent building facing onto Tullow Street. An article in the Irish Times of Saturday 21 June 1873 recorded the laying of the foundation stone of the new Presentation Convent building and documents that the contract for the works was awarded to William Faircloth, the builder of Mount Wolseley¹:

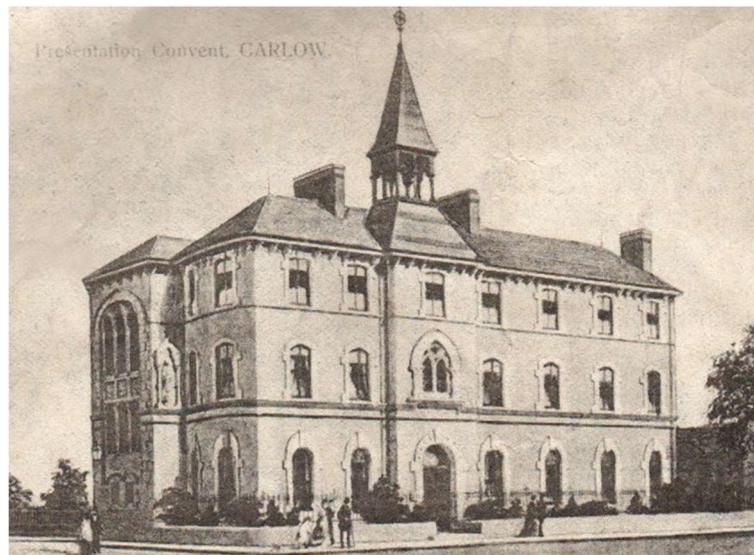


Fig.1: Early postcard showing the Presentation Convent building with its central belfry. The historic black and white image shows the building and roof in their original form.

“PRESENTATION CONVENT, CARLOW

The foundation stone of the New Presentation Convent at Carlow was solemnly laid and blessed yesterday by the Most Rev Dr Walsh, Bishop of Kildare and Leighlin, in presence of a large number of the clergy and laity of the district. The school children, to the number of several hundreds, presented a most edifying spectacle, and the neatness and order which characterised them gave much gratification to those present. A number of handsome banners, carried by the children, added much to the beauty of the display. The new convent will supply a want long felt, and will comprise all the usual accommodation necessary in such institutions. After the ceremonials of the day, the reverend mother and members of the community entertained the bishop, clergy and ladies and gentlemen present to a sumptuous dejeuner. Subsequently the workmen were entertained in an hospitable manner. The new buildings have been contracted

¹ William Faircloth built Mount Wolseley in County Carlow. (Dictionary of Architects dia.ie)

for by Mr William Faircloth, builder, Carlow and will be carried out from the designs under the superintendence of Mr William Hague, architect, Westland row, Dublin.”

Further expansion saw the building of a new two-storey school building to the east of the convent on Tullow Street in 1889. A contemporary photo taken by Robert French shows the gable-fronted national school to the foreground of the earlier convent with two-storied wing to the east. The image also shows the belfry which once rose above the convent’s entrance bay and the original chimneystacks. These features were removed when the roof was repaired in the 20th century and only two red brick chimneystacks now punctuate the ridgeline.

The second image below provides a glimpse of the convent’s garden and original rear extension to the north.



Fig.2: Tullow Street, Carlow by Robert French taken 1899-1906, Lawrence Collection, courtesy of the National Library of Ireland.



Fig.3: An image of the convent garden, looking towards the rear elevation with its original extension. The eastern elevation of the former chapel, now museum building, is seen on the right.

2.2 Historical Maps

Historical Ordnance Survey maps document the early development of the Presentation Convent on Tullow Street. The first edition Ordnance Survey map of 1839 shows the original convent which had been established by the Presentation Sisters in 1811. The end-of-terrace building is shown with a rear extension that projected northwards into the formal garden. The garden was bounded to the north end by the rubble stone wall against which two small garden structures had been built. The garden extended eastwards to an area that would become the convent's burial ground. Today, the houses of Presentation Place stand within eastern part of the original grounds.

The early map shows that the southern part of the museum building was originally part of the convent and that the convent chapel extended northwards from it. The historic plan from the 1830s also shows the footprint of adjacent structures of interest including the town's Roman Catholic chapel.

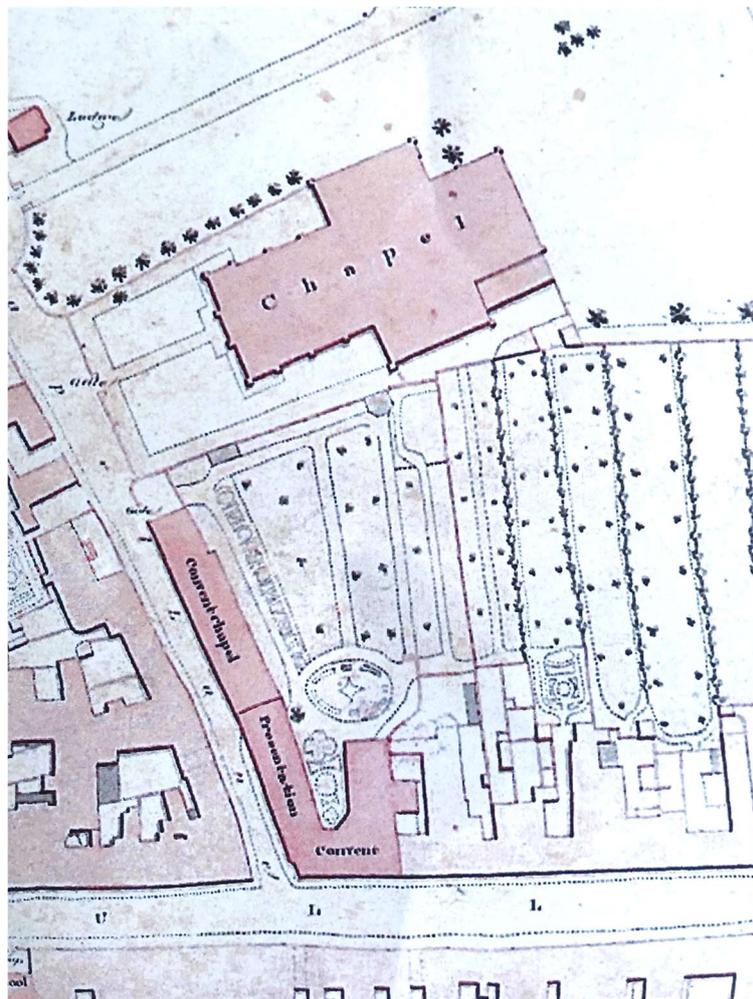


Fig.4: Extract of OS Map of Town of Carlow, 1:1,056, Sheet 3, Surveyed 1839, (Copy TCD, Original in National Archives of Ireland OS/140/Carlow/1839)

The 1873 map depicts the convent complex as it was immediately prior to the construction of a new convent building. The original Presentation Convent is shown to have had a basement with five lightwells. Today, just two light the small three-roomed basement at the west end of the replacement convent building. The map also shows that an extension to the north side of the building had been modified with the loss of a structure from its east side. To the east of the extension was an enclosed yard that was likely used for domestic purposes such as laundry.

The plan documents the 11-bay range along College Street that was now used as the National School. The building's footprint includes an extension to the northeast corner. A summer house and an ancillary building are shown on the map to the northwest corner of the garden and the convent cemetery is marked within an enclosure along the northern boundary wall.

William Hague's 1870's convent is shown for the first time in the cartographic record on the 1907 Ordnance Survey map. Its rear extension is depicted on both this map and also in the old photograph above. The purpose-built National School of 1889 is shown directly to the east of the convent along Tullow Street.

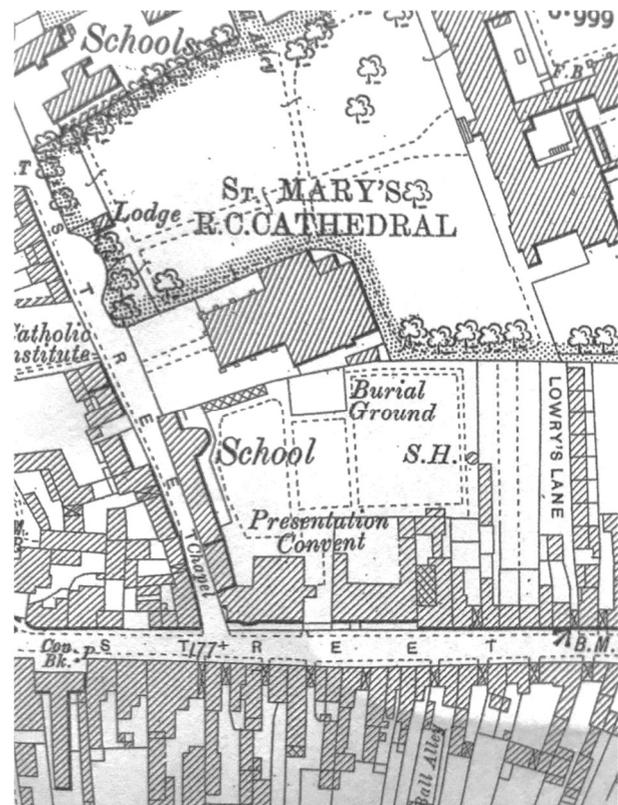
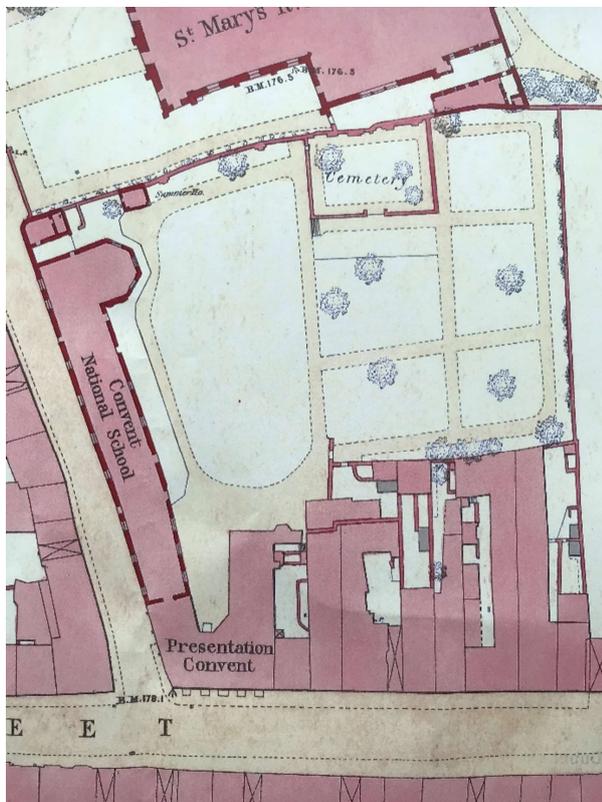


Fig.5: Left: Detail of OS Map of Town of Carlow, 1:500, Sheet 17, Surveyed 1873, Published 1875 (TCD)

Fig.6: Right: Detail of OS Map of Town of Carlow, 1:500, Sheet 17, Surveyed 1907, Published 1909 (TCD)

Sources:

Walsh, T.J. *Nano Nagle and the Presentation Sisters*, Dublin: 1959

Purcell, M. *Carlow in old picture postcards Volume 1*, The Netherlands: 1999

McGrath, T. (Editor) *Carlow History and Society*, Dublin: 2008

Report: O'Boyle, M for Bluett & O'Donoghue Architects. *Architectural Heritage & Impact Report Carlow County Museum*, 2007

3 ARCHITECTURAL RECORD

3.1 Introduction to Inventory

The following inventory is a written description of the historic library building, modern library extension, ancillary features and setting. It follows the format and standard of the National Inventory of Architectural Heritage. An accompanying set of photographs can be found in appendix one of this report.

3.2 Setting

Carlow Central Library is located within the former Presentation Convent at the corner of Tullow Street and College Street. The former convent chapel, now used as the County Museum abuts the north of the former convent. Carlow Cathedral and Carlow College lie to the north of the site.

3.3 Composition

Detached seven-bay three-storey over basement former Presentation convent, built 1873 to a design by William Hague, with full-height entrance breakfront at third bay from west. Two-bay bow end and projecting stairs bay to west elevation. Abutted to rear by library extension, built c.1998. Car park to rear in former convent garden with former garden wall to north.

3.4 External Inventory

- 3.4.1 Front Site: Granite plinth wall and wrought-iron railings with cast-iron fleur-de-lys finials enclose the small front site and site to west. Railings bound planted gravel-covered area. Concrete kerbs with wrought-iron bars cover the basement lights wells. Granite steps and cobble lock brick paving afford access to main entrance door. Painted terracotta statue of Our Lady mounted on cut-stone limestone pedestal upon a concrete base. Carved panel to front face with lettering AVE MARIA set within cusped pointed-arch, carved by Walsh of Carlow.
- 3.4.2 East Site: Presentation Place to the east of the Presentation Convent is a public walkway that provides access from Tullow Street modern library and to Carlow Cathedral. The east side of Presentation Place is lined with a modern terrace of two-story houses and commercial accommodation.
- 3.4.3 Rear Site: Rear of former convent building is abutted by a library extension. East elevation of the former convent chapel, now County Museum, forms the west boundary of the rear site. Limestone-clad flat-roofed extension to the north end of the Museum's east elevation, built c.2012 to design by Bluett & O'Donoghue Architects. Car park to rear within the former garden. Random-coursed rubble limestone wall to north end, built as boundary wall of convent garden. Wall was formerly abutted by glass houses. Segmental-headed archway to rendered wall having castellated coping affords access to northwest corner of rear site. Terrace of two-storey buildings to east of yard forming east side of Presentation Place.
- 3.4.4 East elevation of museum faces rear site of Library. Elevation constructed mostly of random-coursed limestone masonry with granite rubble patches to upper storey. Cut-stone granite sill course below upper windows. Lancet windows with red brick surrounds with timber tracery and lattice windows to upper storey. Ground-level windows have flat-arch red brick openings with concrete sills. Flat panels above window openings have red or yellow brick reveals. Flat panels are surmounted by cut stone granite or limestone flat arches comprising a central voussoir with flanking members. The variety of

stonework and its irregular usage in this elevation suggests that some of it may have been reused from an earlier building.

- 3.4.5 Front and West Elevations of Presentation Convent: Elevations are weathered with replacement cementitious render that is ruled-and-lined to mimic ashlar. Moulded cornice and scrolled corbels to eaves course. Cement-rendered plinth with moulded stringcourses. Moulded sill courses to first and second floors. Plinth-course with cast-iron air bricks beneath each window opening on front elevation. Alarm box and engraved limestone plaque. Gas meter and pipes to front elevation.

South-facing side of west-end stairs bay has a niche with statue at second half-landing level. Aedicule-fronted niche with raking cornice and crocket finial with cusped pointed-arch opening supported by colonnettes having foliate capitals supporting a gable with. Niche and surround are painted. Green-coloured statue of Christ the King may be copper or coloured terracotta. Base plinth of statue is cast-iron and bears lettering which may be the name of the manufacturer. Statue stands on cut-stone granite pedestal.

East Elevation: Ruled-and-lined cement render with former chimneybreast to centre.

- 3.4.6 Rear Elevation: Ruled-and-lined cement render with buttresses. Square-headed openings inserted at ground-floor level to provide access to library extension.

3.4.7 Openings

- (a) Main Entrance Door: Round-headed door opening with lugged-and-kneed cement-rendered surround with paterae and decorative keystone. Replacement plain-glazed fanlight with timber frame. Double-leaf doors with bolection panelling to exterior faces and diagonal battens to interior faces.
- (b) Ground-floor windows to front and west bow comprise round-headed window openings with painted lugged-and-kneed rendered surrounds with crucifix keystones, granite sills and one-over-one timber sash windows with ogee horns.
- (c) First-floor windows to front and west bow comprise pointed-segmental-headed window openings with painted lugged-and-kneed rendered surrounds, moulded sill course and two-over-two timber sash windows with ogee horns. First-floor window of entrance bay comprises a painted pointed arch opening with plain rendered archivolt and hood moulding supported by rendered pilasters. Granite tracery comprising quatrefoil over a pair of pointed-arch lancets with leadlight glazing.
- (d) Second-floor windows to front and west bow comprise segmental-headed window openings with painted lugged-and-kneed rendered surrounds, moulded sill course and two-over-two timber sash windows with ogee horns.
- (e) West elevation has projecting staircase bay which is lit by a full-height decorative leadlight window comprising a round-headed arch with hood moulding and block-and-start jams, granite tracery comprising triple-light window with pointed-arch lancets at second-half landing with a carved three-panelled apron below, triple-light window with round-headed lancets to first half-landing with rendered apron below and a pair of square-headed lights at ground-floor level having round-headed block-and-start surrounds ashlar granite surrounds. Leadlight glazing with stained glass margin panes.
- (f) East elevation has two square-headed door openings to ground floor with fire doors inserted. Single square-headed window openings to all floors with cement-rendered lugged-and-surround with granite sills and two-over-two sash windows with ogee horns.
- (g) Rear elevation has square-headed window openings to second floor with cement-rendered lugged-and-surround with granite sills and two-over-two sash windows with ogee horns.

- 3.4.8 Roof was modified in recent years. Three chimneystacks were taken down and two were reconstructed along the ridge. The third to the east was not rebuilt. A belfry was removed from over the entrance bay. A lead-flashed pitch (visible from drone photographs) was added over the entrance bay. To the rear pitch is an automated glazed louvered vent.
- 3.4.9 Roof is now is single-span hipped with curving slope over western bow end and hip over staircase bay. Replacement terracotta ridge tiles with wrought-iron finials to each end of ridge. Natural slates over impervious roofing felt. Mixture of slates appear to include a predominance of Bangor Blue with the remainder been a mix of Cumberland Green and grey slates. Replacement red brick chimneystacks with lead flashing, concrete coping and yellow terracotta pots. Moulded-profile flat-bottomed cast-iron gutter to west end with squared cast-iron downpipe. Replacement half-round gutters to south and east ends with round downpipes. King-post trusses to roof with rafters, purlins and bitumen sarking felt. Timber wall plates to top of rubble walls. Floor of roof space is insulated with pink fibreglass batts between the joists. Automated glazed louvred opening to west end of north slope.

3.5 Internal Inventory

3.5.1 Rooms and spaces within the interior have been named. Any numbering assigned corresponds with numbering system used on surveyor's drawings eg. GF R02 or FF R02.

3.5.2 Basement: Basement Stairs and Hallway

General: Basement is accessed via a staircase beneath the principal staircase. A door in the side of the staircase opens to the basement stairs. Small hallway at bottom of basement stairs affords access to the basement room to west and the central hallway to the east.

Floors: Poured concrete floor is uneven to basement hallway to west. Part of it has been rebated to accommodate the outward swing of the door to the central hall.

Joinery: L-plan flight of timber stairs beneath principal staircase with projecting treads. Some replacement treads and risers. Risers have been pierced with holes for ventilation. Partially painted. Modern timber handrail to wall. Some steps have been replaced. Timber lintels over stairs span gap in spine wall.

Walls: Plasterboard to north lines inside of side of principal staircase. Concrete walls to south and east. Stud walls to east and south of hallway at bottom of basement stairs.

Openings: Square-headed fire door to east in partition wall opens to inner hallway. Square-headed fire door to south in partition wall opens to basement room to west.

Ceiling: Plasterboard to soffit of principal staircase. Circular plastic light.

Features: Pipework to walls.

3.5.3 Basement: Central Hallway

General: Central hallway of basement is accessed from the small hallway of the stairs to the west and affords access to the central room to south and the room to east.

Floors: Poured concrete floor is uneven to basement hallway to west.

Joinery: L-plan flight of timber stairs beneath principal staircase with projecting treads. Some replacement treads and risers. Risers have been pierced with holes for ventilation. Partially painted. Modern timber handrail to wall. Some steps have been replaced.

Walls: Painted rubble stone walls. Render to north at west end. Stud partition to south. Pipework to walls.

Openings: Square-headed fire door to west opens from small western hallway. Fire doors to south and east open to the central room and the eastern room respectively. East door has painted brick reveals. A segmental-headed archway with brick and concrete piers subdivides this hallway.

Ceiling: Segmental brick vault is painted.

Features: Pipework to walls. Surface mounted wiring in conduit with plastic circular light fitting to vault.

3.5.4 Basement: Bow-ended room to west

Floors: Uneven concrete declines from south to north.

Walls: Random rubble with roughly finished dense lime and cement render and cement mortar patches. Gypsum plaster partition wall inserted to north.

Openings: Segmental-arched opening to south elevation with brick reveals and wrought iron gate. Light well outside. Square-headed door opening in modern partition wall with fire door.

Ceiling: New gypsum skimmed ceiling with fluorescent lights and fire safety equipment.

Features: Segmental-arch coal chute opening to west end. Chute reveals and soffit are faced with bricks. Surface opening is blocked and covered externally by the public footpath. An internal timber cover has decayed and fallen. Gas boiler to central of room. Surface-mounted wiring and pipework throughout.

3.5.5 Basement: Mid room, elevator plant room

Floors: Renewed concrete floor with concrete threshold to north.

Walls: Random rubble with concrete block infill. Gypsum plaster partition wall inserted to north.

Openings: No opening to front elevation. Square-headed door opening in modern partition wall with plywood and glazed door

Ceiling: Brick barrel-vaulted ceiling, now painted, with fluorescent light.

Features: Elevator plant to room. Wiring and pipework throughout.

3.5.6 Basement: Room to east

Floors: Uneven concrete declines from south to north. Floor level in this room is higher than central hallway to the west.

Walls: Painted random rubble walls with patch repair in concrete block and cement mortar. Cement fillet to top of walls inserted when new floor above was constructed.

Openings: Splayed embrasure with square-headed window opening to south elevation having timber louvered doors opening outwards to external light well. Timber lintels above opening. Segmental brick-arch opening with brick reveals replacement door fire door opens to hallway to west.

Ceiling: Renewed ceiling of reinforced concrete joists supporting concrete blocks above Fluorescent lights.

Features: Gas boiler to centre of room. Wiring and pipework throughout. Control panel of boiler to north wall and fire safety equipment.

3.5.7 Ground Floor: Entrance Hall (GF R03)

Floors: Granite threshold step. Encaustic floor tiles in black, red, cream and brown, laid in a geometric pattern. Floor has been sealed with a glazed varnish.

Joinery: (a) Square-headed door opening to Shaw Room to west with moulded architrave and flat-panelled door with glazed pane inserted to top. (b) Stilted-segmental-headed window opening with roll-moulded arch having timber surround with glazed fanlight, octofoil windows above glazed panes and bolection panels. (c) Square-headed door opening from entrance hall to stair hall with central glazed and panelled timber double-leaf doors with rectangular overlight, flanked by side panels of octofoil lights above glazed pane and timber panel. Automatic glazed doors installed.

Walls: Painted plaster with tall moulded stucco skirting boards and run-in-situ cornice. Leaflet holder and cork board to west. Meter box to east of entrance door with steel doors and pipework below. Steel wall radiator to east. Steel hose reel to east.

Openings: Square-headed door opening in modern partition wall with plywood and glazed door

Ceiling: Renewed ceiling with eight round light fixtures, emergency light and smoke detector.

3.5.8 Ground Floor: Shaw Room (GF R01)

Floors: Replacement timber floorboards run east to west. Nailed in place over joist running north to south.

Joinery: Tall moulded skirting boards. Moulded timber picture rail. Two windows to front (south) and two windows to bow to west. Splayed embrasure. Full-height moulded architraves. Bolection panelled window-backs, elbows, soffits and shutters. Two sash weights within weigh box. Red brick to embrasure. Plain panel behind shutters. Early brown stain under contemporary white paintwork. Modern staff beads.

Walls: Walls are lined with paper and are painted.

Openings: Round-headed window openings to front elevation and bow end to west with square-headed architraves, flat-panelled shutters, timber window-backs with radiators in front. Round-headed timber single-pane sash windows with ogee horns. Window and door to east wall are described above in Entrance Hall. Glazed door to north is described below in stairhall.

Ceiling: Lath and plaster ceiling is lined with a Lincrusta type wallpaper and is painted. Acanthus-leaf ceiling rose, run-in-situ cornice.

Features: Red marble fireplace to chimneybreast to east. Replacement cast-iron insert. Glazed tiles. Flue is lined. Black stone hearth. Pull bells flank fireplace. Knob of that to south is missing.

Video camera and exit sign to northeast corner.

3.5.9 Ground Floor: Stairhall (GF R02)

Floors: Red and black terracotta quarry tiles, sealed with varnish.

Joinery:

Walls: Painted plaster with tall moulded stucco skirting boards. Square-headed recess to east wall houses AED and video camera.

Openings: (a) Door from entrance hall described above. (b) Square-headed opening to north wall with glazed automatic doors affords access to library extension. (c) Round-headed door opening with timber surround, panelled double-leaf door, and glazed automatic sliding door to north wall affords access to adjacent museum hallway. (d) Square-headed door opening to west end of north wall with moulded timber architrave; doorway now blocked up. (e) Square-headed modern timber surround to lift in east wall. Square-headed door opening to west with moulded architrave and panelled door opening to small room beneath stairs. (f) Square-headed opening with modern timber surround and window to Shaw Room to south.

Ceiling: Painted plaster ceiling is divided into two parts by segmental arch running north-south. Run-in-situ cornices and round light fixtures.

Features: Staircase to west and lift to east.

3.5.10 Ground Floor: Children's Reading Room (GF R04, GF R07)

Floors: Carpet to floor. Replacement concrete floor over west end. Suspended timber floor to main children's reading room.

Joinery: Replacement timber skirting.

Walls: Renewed plasterwork is painted.

Openings: (a) Round-headed window openings to front elevation with square-headed architraves, flat-panelled shutters, timber window-backs with radiators in front. Round-headed timber single-pane sash windows with ogee horns. (b) Square-headed door opening to north wall at west end opening to storeroom with modern moulded architrave and flat-panelled door. (c) Square-headed door opening to north wall at east end opening to secondary staircase with modern moulded architrave and flat-panelled door. (c) Square-headed door opening with fire doors to east elevation.

Ceiling: Painted plaster ceiling with run-in-situ cornices. Cornice to smaller space to west is early. Cornice to main children's reading room is replacement. Round light fixtures.

Features: Children's reading room is divided in two by a chimneybreast at the west end. On the east side of the chimneybreast is a fireplace of Carlow marble with red marble bosses that are encircled by tooled stars. Glazed hearth tiles. Cast-iron fire surround.

3.5.11 Ground Floor: Storeroom off Children's reading room (GF R05)

Floors: Carpet to floor.

Joinery:

Walls: Painted plaster.

Openings: Panelled door in south wall opens to west end of children's reading room.

Ceiling: Suspended ceiling with square hatch. Remnants of original ceiling above with exposed riven laths and run-in-situ cornice. Part of former segmental-headed archway is also visible.

3.5.12 Ground Floor: Storeroom to east of lift (GF R06)

Floors: Carpet to floor.

Joinery:

Walls: Painted plaster.

Openings:

Ceiling: Painted plaster.

3.5.13 Ground Floor: Storeroom beneath stairs

Floors: Modern glazed floor tiles.

Joinery:

Walls: Painted plaster.

Openings: Two square-headed window openings on west wall. Timber casement windows with rolled glass panes.

Ceiling: Painted plaster.

3.5.14 Primary Staircase

Primary staircase is located at the west end of the stairhall. Timber dog-leg open-string stairs rises from ground floor to second-floor landing, turning at half-landings and landings. Two turned balusters per tread supported ramped moulded handrail. Turned newel posts. Starting newel has carved panel carved with letter P (P stands for Presentation). Curtail step to bottom of stairs. Soffits of flights and half-landings are coffered and panelled with stained, diagonal T&G planks. Moulded wall string has been replaced in sections. Stairs is suspended at second half-landing by two steel tension rods which hang from the roof space. Timber windowsills to granite tracery leadlight windows.

Square-headed door opening to north wall of second half-landing with modern timber and glazed door opens to museum to north. First floor-landing has timber floorboards, modern skirting boards, renewed wall and ceiling plaster. Door to south opens to office. Lift to east. Window to north with internal timber sill. Door second-floor landing with modern panelled door opens to storeroom.

3.5.15 Secondary Staircase (GF R08)

Secondary staircase inserted to northeast corner of building. Stair core is entirely modern. Concrete stairs, formed *in situ*, with mild steel tubular wall-mounted handrail. Mild steel tubular banister with perforated steel panels guarding stairs. Carpet to floors and staircase.

Space is lit by sash windows on the east and north elevations. Fire doors at landings open to first and second-floor hallways.

3.5.16 First Floor: Bow-ended office to west (FF R01)

Floors: Carpet

Joinery: Tall moulded skirting boards

Walls: Painted plaster.

Openings: (a) Pointed-segmental-headed window openings to front elevation and bow end to west with square-headed architraves, flat-panelled shutters, timber window-backs with radiators in front. Pointe segmental-headed timber single-pane sash windows with ogee horns. (b) Square-headed door openings to east and north walls having moulded architraves and panelled timber doors.

Ceiling: Painted plaster.

Features: Chimneybreast to east with Carrara marble fireplace having glazed tiles to hearth.

3.5.17 First Floor: Hallway (FF R07)

Floors: Carpet.

Joinery: Modern plain timber skirting boards.

Walls: Renewed painted plaster. Segmental-archway with torus moulding above door that opens to lift lobby.

Openings: (a) Square-headed door openings with moulded architraves and timber panelled doors open to two WCs to south and a middle office to south. (b) To east end are three sets of fire doors: one opens to secondary staircase landing, one to the local history department and one to the lift lobby. (c) Square-headed window opening to north wall at east end of hall with two-over-two sash window having ogee horns and replacement sill and window-back. Steel radiator in front of window.

Ceiling: Painted plaster. Ceiling is suspended to east end. Square attic hatch to west end.

3.5.18 First Floor: Local History Department (FF R08)

Floors: Carpet.

Joinery: Modern skirting boards.

Walls: Renewed painted plaster.

Openings: (a) Pointed-segmental-headed window openings to front elevation with replacement timber window-back having radiators in front. Pointed-segmental-headed timber single-pane sash window with ogee horns. Renewed painted plaster with fluorescent lights. (b) Two segmental-headed archways to west end with square-headed doorways beneath to north and an internal window beneath to south.

Ceiling: Renewed painted plaster.

3.5.19 First Floor: Mid Office (FF R06)

Floors: Carpet.

Joinery: Modern plain timber skirting boards.

Walls: Renewed painted plaster.

Openings: (a) Pointed-segmental-headed window openings to front and east elevation with replacement timber window-back having radiators in front. Pointed-segmental-headed timber single-pane sash window with ogee horns. (b) Square-headed door openings with moulded

architraves and timber panelled doors open to kitchen to west and hall to south. (c) Internal window to east provides view into adjacent room to east. (c) Square-headed door opening to hall to north with fire doors.

Ceiling: Renewed painted plaster. Fluorescent lights.

3.5.20 First Floor: Kitchen (FF R03)

Floors: Non-slip floor covering.

Joinery: Wall-mounted kitchen cabinets above counter and under-counter white goods and presses.

Walls: Renewed painted plaster. Segmental-archway above doorway to west.

Openings: (a) Square-headed door openings with moulded architraves and timber panelled doors open to east and west. (b) Pointed-arch window opening with granite tracery comprising a pair of pointed-arch lancets and a quatrefoil light above. Leadlights with stained glass margin panes.

Ceiling: Renewed painted plaster. Fluorescent lights.

3.5.21 Second Floor: Archives (SF R01, SF R03, SF R04)

Floors: Carpet

Joinery: Modern skirting boards.

Walls: Renewed painted plaster. Segmental-archway through spine walls afford access between west, mid and east rooms.

Openings: (a) Square-headed door openings with fire doors open from hallway. (b) Segmental-headed window openings to front and bow-ended west elevation with replacement timber window-backs having radiators in front. Segmental-headed timber single-pane sash windows with ogee horns.

Ceiling: Renewed painted plaster. Fluorescent lights.

Features: Chimneybreast to east wall of bow-ended western room.

3.5.22 Second Floor: Store room

Floors: Timber floorboards

Joinery: Modern skirting boards.

Walls: Renewed painted plaster.

Openings: (a) Segmental-headed window openings to north elevation with replacement timber window-back having radiator in front. Segmental-headed timber single-pane sash window with ogee horns.

Ceiling: Renewed painted plaster. Fluorescent lights.

Features: Lift to west.

3.5.23 Second Floor: Hall to west of lift.

Floors: Carpet

Joinery: Modern skirting boards.

Walls: Renewed painted plaster.

Openings: (a) Segmental-headed window openings to north elevation with replacement timber window-back having radiator in front. Segmental-headed timber single-pane sash window with ogee horns. (b) Square-headed door opening with fire doors to archive.

Ceiling: Renewed painted plaster. Fluorescent lights.

Features: Lift to east.

3.5.24 Library Extension to North

General: Extension built c.1997/9 on site of early rear extension and rear garden. Main body of extension comprises a flat-roof structure with internal columns. Glazed to north and east. Book store to north at first floor level.

4 STATEMENT OF SIGNIFICANCE

4.1 Appraisal of the Architectural Heritage of the Former Presentation Convent

4.1.1 Introduction

The following architectural heritage assessment evaluates the quality and importance of the former Presentation Convent using a nationally accepted model of appraisal. The building has been rated in accordance with the National Inventory of Architectural Heritage rating system and has been assessed under the Categories of Special Interest, which are a series of values set out in the Planning and Development Act, 2000 (as amended).

4.1.2 Statutory Protection

The former Presentation Convent is a protected structure (CT97). The Record of Protected Structures describes the building as: “Asymmetrical mid-Victorian corner block to Tullow Street extending along College Street to incorporate Georgian complex. Advanced entrance bay with separate roof in French style.”

4.1.3 Architectural Conservation Area

The former Presentation Convent is located within an A-shaped Architectural Conservation Area which includes College Street, a section of the R417/Court Place, Brown Street and Dublin Street. The building is situated at the southeast corner of the ACA.

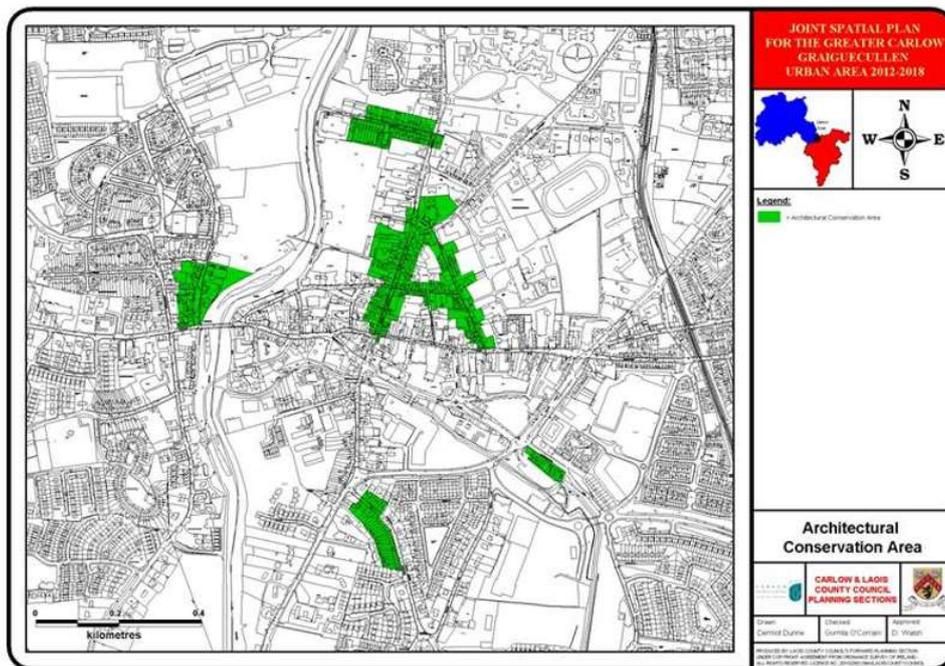


Fig.7: Joint Spatial Plan for the Greater Carlow Graiguecullen Urban Area 2012, Architectural Conservation Area Map

4.1.4 NIAH Importance Rating

NIAH ref no: 1000314.

The National Inventory of Architectural Heritage (NIAH) rates the importance of buildings or structures under the following headings: International, National, Regional, Local or Record Only. On assessment, the NIAH found the Presentation Convent to be of Regional importance. The

Joint Spatial Plan 2012-2018 defines Regional importance as a “Structure or Building within their own area or region and also form a comparative basis when the structures of particular regions are compared with those of other defined regions within Ireland.” When recorded by the NIAH, the building was determined have an “Architectural” and “Group” significance.

4.1.5 Categories of Special Interest

Part IV, Planning & Development Act, 2000 (as amended) lists a series of heritage values that can be applied, where relevant, to buildings and structures of heritage significance. The values known as the Categories of Special Interest are defined in the Act as Architectural, Historical, Archaeological, Artistic, Cultural, Scientific, Technical and Social.

4.1.6 Assigning the Categories of Special Interest

The writer of this report has evaluated the former convent building under the above categories and found it to be of Architectural, Historical, Artistic and Social Interest.

4.1.7 Architectural Interest

The former presentation convent was designed by the architect William Hague c.1873. The building is quite typical later Victorian buildings in Ireland and references the Gothic Revival style which is so commonly seen in Roman Catholic institutional structures of the day.

The new convent was built to house the existing Presentation community who established themselves in the town in 1811. Hague’s building added to the existing group of fine ecclesiastical and institutional structures in the immediate area which included the Cathedral of 1833 and Carlow College of 1782.

The convent building, which fronts onto Tullow Street, has a number of notable external features and devices including decorative stringcourses, ruled-and-lined rendered, a corbelled cornice to the eaves, an attractive round-headed doorway with heavy panelled doors, a variety of sash windows, granite tracery with lead lights and statuary. Although the building has been re-roofed, with the resulting loss of its original bell tower and chimneystacks, the building’s exterior continues to contribute the historic character of the town’s centre.

It is clear from the floor plan that Hague considered the shape of the wedge-shaped building plot when designing the convent. His scheme made the most of the western side elevation where he formed an attractive bow end and an elaborate staircase bay. The resulting elevations made a positive contribution to the corner of Tullow Street and College Street.

Internally, the former convent has a number of features of interest including encaustic and quarry floor tiles to the entrance hall and stairhall, good marble fireplaces in Carrara, red marble and local Carlow limestone, window joinery including architrave and shutters, door architrave and doors, and a very fine staircase with decorative panelling to the underside of half landings and flights.

The building was extensively refurbished and remodelled c.1997/9 at the time that the present library extension was added. During works, much of the internal plasterwork to walls was replaced, and a lift shaft and plant room were inserted. In general, because of the retention of many appealing architectural features of interest during this process, the historic building’s special architectural interest was largely maintained, however the insertion of the lift impacted on the floor plan and eroded the original spatial arrangement of the heart of the building.

4.1.8 Historical Interest

The Presentation Sisters have a long association with Carlow town which stretches back to 1811. The convent building, which was built in the later 19th century, is of historical interest because of the role that it played in the social, educational and religious development of the town.

4.1.9 Artistic Interest

The former convent has good quality features which include carved stone fireplaces, decorative floor tiles, a beautiful timber staircase, early cornices and a ceiling rose, window and door joinery, a series of granite tracery windows with leaded lights, and external statuary. Each element enhances the Victorian building and exemplifies the artistry and craftsmanship of the day.

4.1.10 Social Interest

The Presentation Convent is part of a group of religious and institutional structures at the heart of Carlow town. The Sisters were part of the town's social fabric for centuries and played a key role in fostering education and serving the poor and vulnerable. The social significance of the convent building has been maintained with its adaptation for use as the county's central library.

4.2 Appraisal of the Architectural Heritage of the Modern Library Extension

4.2.1 Evaluation

The modern library which was built towards the end of the 20th century is not of significance from an architectural or cultural perspective. The extension does not contribute to the character of the former Presentation Convent, its historic setting, nearby protected structures, or the wider Architectural Conservation Area.

4.3 Appraisal of the Museum Building

4.3.1 Evaluation

The museum building was formerly the convent chapel and early school and is a building of architectural, historical, artistic and social interest. The east elevation and roofscape contribute to the special character of the rear site of the former Presentation Convent. The elevation has a unique visual character due to the materials used in its construction. Built principally in limestone rubble with patches of granite rubble stone, it is enhanced by a cut-stone granite stringcourse and yellow and red brickwork. Its flat arches, above the ground floor openings, appear to have been formed in salvaged granite and limestone. The shape of the cut-stone granite flat arches suggest that they may have been taken from early Gibb-style openings from the 18th century.

The architectural practice Bluett and O'Donoghue designed an extension to the north end of the museum's east elevation which was built c.2012. The modern limestone-clad block is architecturally distinctive from the historic elevation of the former chapel.

4.4 Appraisal of the Site

4.4.1 Evaluation

The front site of the Presentation Convent is enclosed by good quality wrought and cast-iron railings which are mounted on a plinth wall formed of cut-stone granite blocks. A painted terracotta statue of Our Lady, which is set on a cut limestone pedestal, stands within the enclosure. The front site is part of the early fabric of the former convent and enhances both its front elevation and the streetscape of Tullow Street.

Presentation Place to the east and the car park to the rear do not contribute to the special character of the setting. However, the vista towards the entrance tower of Carlow Cathedral, which is framed by Presentation Place, is significant and adds greatly to the setting of the former convent building.

The north end's rubble limestone wall is of architectural interest as it is the only remaining original feature of the former convent garden.

To the west of the boundary wall is an archway that is set within a tall, castellated wall which is rendered and flat panelled externally. This wall provides a sense of formality to the streetscape outside.

4.5 Group Significance

The Presentation Convent is not an isolated building but rather is part of a wider group of 18th and 19th-century ecclesiastical buildings and structures that give the centre of the town character. The group includes the museum building to the north, which was formerly used as the convent chapel and school, Carlow Cathedral and the complex of Carlow College.



Fig.8: The former chapel of the Presentation Convent with castellated entrance to the car park



Fig.9: East elevation of the former chapel and early schoolrooms, now Carlow County Museum

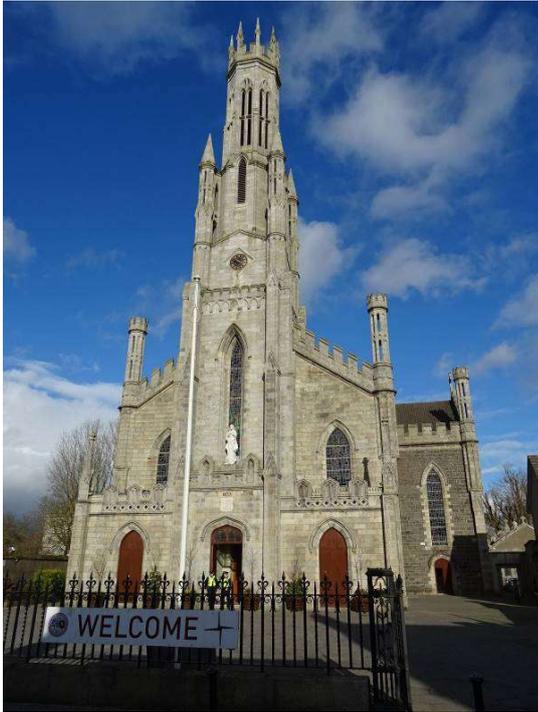


Fig.10: Cathedral entrance from College Street

Fig.11: A striking vista of the cathedral's tower terminates the north end of Presentation Place



Fig.12: The gate lodge at Carlow College is built in the Greek Doric style - the earliest and simplest Order of Classical Architecture



Fig.13: Carlow College is a fine complex of structures lying to the north of the Presentation Convent



Fig.14: Eastern side of Presentation Place is lined with a development of rendered buildings



Fig.15: The north end of the rear site car park is bounded by a rubble limestone wall which was built to enclose the convent's garden.



Fig.16: A streetscape view of Tullow Street, looking east. The former Presentation Convent is a landmark building on the northern side of the street.

5 EXTERNAL CONDITIONS

5.1 Exterior Condition Survey:

5.1.1 Nature of Survey

The survey is based on a visual inspection of features and fabric. No opening up of concealed elements was carried out.

5.1.2 Roof:

Survey conducted: External roof was visually inspected from ground level only. Internal roof was inspected from within roof space. Because of inaccessibility, the roof space inspection was limited to the east end and centre of the attic.

East and West Chimneystacks situated along ridge:

Red brick chimneys have been rebuilt above the ridgeline. A third chimney, which was once located at the east elevation, has been removed. Biological staining to concrete coping. Cement pointing to joints. Spalled faces of brick due to dense cement-based pointing. Some spalled bricks have been rendered with cement mortar. Cement mortar to chase line at top of lead cover flashing. Some of this mortar has broken away and joint is now open. East face of eastern chimneybreast has a narrow vertical crack seen within roof space. Seven terracotta chimney pots to each chimney are in good condition. Some with wire cowls. Chimney pots at south ends of both stacks have twigs/organic matter as nest material. Water ingress to the south face of the east chimneystack at flashing level has caused the saturation of an internal purloin which is carried on the internal chimneybreast.

Terracotta ridge and hip tiles: Organic staining and lichens to terracotta ridge tiles. Localised area where bedding mortar is missing.

Wrought-iron finials: Organic staining to ironwork.

Slates: Organic growth to natural roof slates with concentrations beneath chimneystacks.

Rainwater goods: Original profiled gutters and square downpipes survive to west elevation. All other rainwater goods have been replaced. Modern gutters are half-round and downpipes are circular profile. Paint flaking and chipped. Sill course at east end of front elevation was broken to accommodate current downpipe.

Timberwork: Roof space is dry and very warm. King post truss roof with rafters and purloins is in good condition. Ends of timbers to be checked by structural engineer. Localised white powdery deposit on timberwork is the result of an early fungal infestation. The white mould has developed due to inadequate ventilation. Excessive humidity is likely caused by the impervious bitumen sarking felt. Purloin to north of attic hatch is split. Saturated purloin to south at chimneybreast. Pink fibreglass batts to attic floor between joists. Three open water tanks to east end are now empty. Vertical crack to brick chimneystack to east.

5.1.3 Walls:

Render: Each of the four elevations is rendered in dense cementitious render that has been ruled-and-lined to mimic the joints of ashlar stonework. Localised patch repairs throughout. Numerous cracks to rigid render due to movement of building. Localised green biological and black atmospheric staining particularly on the underside of stringcourses and sills. Lichen and biological growth to string/sill courses. Over-painted vent grilles (air bricks) to ground-floor plinth course. Localised patch repairs of cement render including areas where chimneystack was removed from east elevation and where rear extension was removed from rear elevation to north. Areas of cement render are now bare.

The cement-based render is largely impervious which means that it does not allow the underlying masonry to breathe. Any driving rain that enters through its many cracks can become trapped. This trapped moisture can lead to the migration of salt crystals and the manifestation of damp within the interior. Whilst the interior of the ground and first floors appear to be free from damp, there exists documentary evidence of a large-scale dry rot outbreak in the past.

Flaking paint to eaves corbels. Stringcourse to east end of front elevation was broken to accommodate the replacement downpipe.

5.1.4 Openings

Window Openings: Timber sash windows are in reasonably good condition and are suitable for refurbishment and draught-proofing. Flaking paintwork to bottom parts of upper and lower sashes and timber sills. Early glass to some windows. In some cases, brittle putty has broken away to leave a gap between the pane of glass and timber sash. Flaking paintwork to cement-rendered window surrounds. Localised cracks to cementitious window surrounds.

No windows to basement level. Lightwells are covered with steel grates set within concrete surrounds. A wrought-iron gate that guards the window opening within the basement room to west has lost its paintwork and is corroded. The timber louvered doors that guard the window opening to the basement room to east have lost their protective paint. The timber lintels above this opening are in good condition.

Cut-stone granite tracery & leaded lights: Atmospheric staining to stonework of windows. Corrosion to wrought-iron bars has led to rust staining. Broken or missing leaded light panes to west at second half landing of stairs. Crack to soffit of hood moulding to decorative window at first-floor level of entrance bay.

Entrance Door: Decorative keystone to main door is defaced. Flaking paintwork and cracks to cementitious surround of opening. Heavy timber doors are in reasonably good condition. Localised open joints between timber mouldings and door. Over painted to exterior.

5.1.5 Front railings

Front railings enclose the front site and continue around to the west elevation. Open joints to cut-stone plinth. Localised paint loss and corrosion to ironwork.

5.1.6 Statuary

Statue of Our Lady and carved limestone pedestal to front site is in good condition. Statue of Christ our King is patinated with age. Cast-iron base is unpainted. Flaking paintwork to niche and aedicule.

5.1.7 Coal Chute

At the west end of the internal basement is a coal chute. The brick-vaulted chute is not adequately weathered and allows water to stream into the basement during wet periods. The opening of the chute underlies the public pavement and is not visible externally.

5.2 Photograph Record of Condition of Roof and Exterior



Fig.17: Rebuilt chimneystack with nest material to pots. Spalled brickwork. Cement pointing with cement patch repairs. Flaking paintwork to replacement half-round gutter. Flaking paint to corbels at cornice.

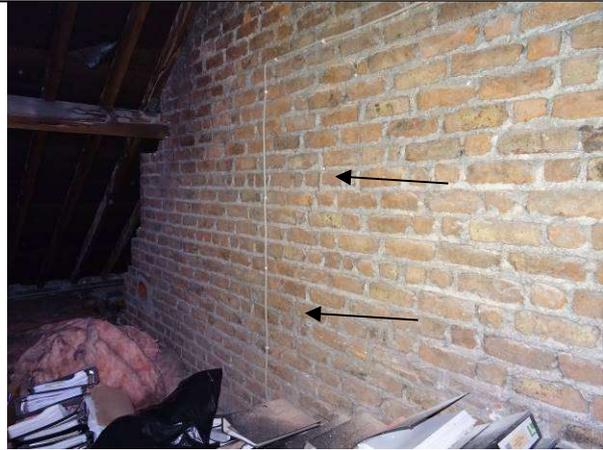


Fig.18: Narrow vertical crack to joints of eastern face of eastern chimneybreast.



Fig.19: Replacement circular downpipe installed to east end of front elevation. Stringcourse was broken to accommodate the insertion.



Fig.20: Original flat-bottomed gutter to the bowed west end with a replacement round-bottomed gutter to the façade.



Fig.21: White mould present to timbers below impervious felt.



Fig.22: Split along purloin to north side of roof.



Fig.23: Green staining to the granite sill. Flaking paint of the sash window's timberwork.



Fig.24: Localised patch repairs to the render at the southwest corner.



Fig.25: West end with stairs window with saturated render, green and rust staining.



Fig.26: Darker render indicates moisture penetration to render. Any cracks allow moisture to travel inwards resulting in damp penetration.



Fig.27: A band of render below the first-floor sill course looks as if it has been renewed. The moulded underside of the sill is very stained by atmospheric pollution. A series of fine cracks can be seen to the render below the upper window.

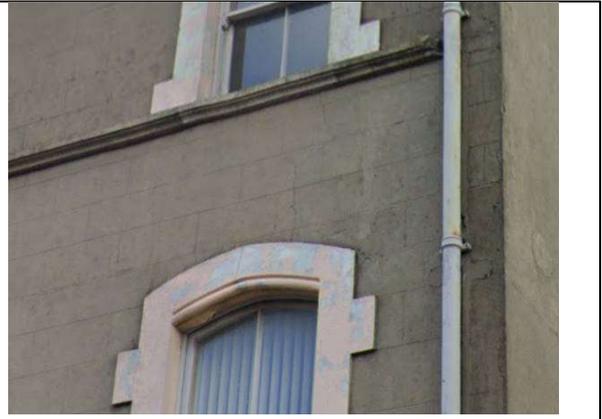


Fig.28: Fine vertical cracks seen in the exterior render of the building. The render has cracked with the slightest of movement because it is so rigid. When rainwater penetrates such cracks, it will not freely evaporate due to the cement render.



Fig.29: Cracking to render and patch repairs at the southeast corner.



Fig.30: A wash applied to render between windows at west end of ground floor on front elevation.



Fig.31: Replacement downpipe with scars of old brackets. Further patch repairs to breakfront render.



Fig.32: Render applied to the scar of the demolished rear extension. The upper floor windowsill was chamfered to accommodate the roof pitch.



Fig.33: Open joints to bottom panel of door.



Fig.34: Flaking paintwork to door surround.



Fig.35: Flaking paintwork to sash with cracked window putty.



Fig.36: Flaking paint to plinth course to front elevation with flaking paint to air vent.



Fig.37: Flaking paintwork to sash window to west elevation.



Fig.38: Open joints to stonework and localised corrosion of ironwork to railings.

6 EXTERNAL RECOMMENDATIONS

6.1 Roof

- 6.1.1 Roof Slates: Roof to be re-slatted. Remove roof slates and assess for quality. Slate ripper to be used to break existing nails. Retain for reinstatement if sound. Slates to be store vertically on site within timber crates. Slates should not be stacked horizontally. All sound slates to be installed to east hip. New natural slates to be provided to other slopes. New slate will match existing in texture, colour and size. Copper clout roofing nails to be used.
- 6.1.2 Ridge and Hip Tiles: Remove terracotta ridge and hip tiles and store on site for reuse. Clean mortar from underside of tiles with bolster chisel. Store on site for re-bedding with lime mortar.
- 6.1.3 Chimneys: Removed organic material/plant life from chimneypots. Install cowls. Check stability of chimneypots and re-bed if necessary. Check flaunching and replace if necessary. Check concrete coping for cracks and fill if required. Cement mortar to be raked from joints using hand tools. Joints must not be widened. Patch repairs of cement render to be removed. Mortar repairs to be made to damaged face of bricks in colour to match existing bricks. Repair mortar, such as Lithomex, to comprise a NHL custom coloured mortar to match existing bricks. Joints of brickwork to be re-pointed to a flush-and-brush finish in lime mortar (NHL 3.5).
- 6.1.4 Membrane: Existing bitumen sarking felt to be removed once slates have been stripped. Felt to be disposed of appropriately. New breathable membrane to be installed. Sawn battens to be installed.
- 6.1.5 Rainwater Goods: Original rainwater goods to west elevation. Replacement round-bottomed gutters and round down pipes to front (south), east and rear (north) elevations. Original rainwater goods to be cleaned, primed and inspected for faults, repaired and painted. Non-original rainwater goods to be replaced with cast-iron units as per original profiles found on west elevation.
- 6.1.6 Iron finials: Finials to each end of the ridge to be cleaned in situ, primed and painted if setting is sound. Setting to be inspected and made good.
- 6.1.7 Lead Flashing to Chimneys: Lead flashing to be inspected and renewed with Code 4 lead sheet if failed. Silicone sealant to be removed from chasing joint. Joint to be cleaned and re-pointed in lime mortar to a flush and brush finish. (NHL 3.5).

6.2 Elevations

- 6.2.1 Cementitious render is dense and traps any penetrating water. It should be removed from all elevations. Decorative surrounds to windows and main door to be retained *in situ*. Moulded corbels, cornice, stringcourse and sill courses to be retained. Flaking paintwork to be removed from render and new paint to be applied in a neutral colour to match new render. Paint should not be applied to any previously unpainted surface. Cracks to be filled in decorative elements will appropriately specified filler following testing of mortar. Joint between new render and existing surround to openings or decorative stringcourses must be filled with lime mortar.

New lime render to be provided (Otterbein NHL 3.5, Wexford Sand: Lime 3:1). Render to be finished to a ruled-and-line finish. Scoring to be refined. No more than 2mm wide

by 2mm deep to mimic ashlar joints. Wider, deeper, irregular or uneven scoring or will not be accepted. Vertical and horizontal lines must be precisely level. Sample of scoring must be presented for approval to conservation consultant.

Flaking paintwork to be removed from plinth course. Air bricks to be cleaned, treated and painted *in situ*. Air vents to be inspected and cleared of any debris.

Walls to lightwells of basement to be patch repaired with lime render. Metal grates above to be treated and painted.

6.3 Windows

6.3.1 Rendered surrounds to be retained. Flaking paintwork to be removed, cracks to be filled and new paint applied in a neutral colour. Only previously painted surfaces to receive paint.

6.3.2 Sash windows to be refurbished by an experienced restorer only. Timberwork to be spliced repaired, where necessary and repainted. New putty to be provided. All extant glass will be retained. Cracked panes will be appropriately replaced. Appropriate draught-proofing system to be provided. Sash chords to be replaced if required. New insulation to be installed behind shutter linings.

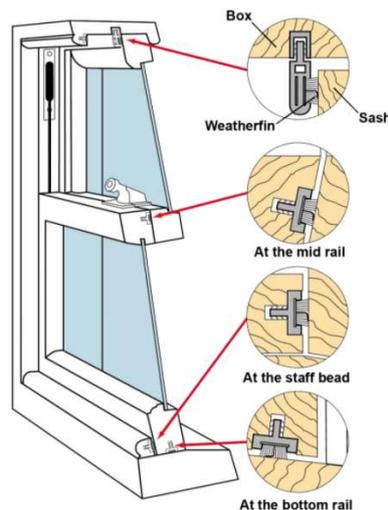


Fig.39: Image draught-proofing system (Ventrolla) to be employed

6.3.3 Tracery surrounds and leaded lights to be repaired by an experienced restorer only. Broken or missing panes of glass to be replaced on a like-for-like basis. Existing iron bars

to be refurbished and reinstated. New lead comes to be provided if required. Open joints to be raked out and repointed with lime mortar to a flush finish.

6.4 Front Door

- 6.4.1 Flaking paintwork to be removed from door surround. Cracks to be filled and new paint to be applied to surround. Paint to be removed entirely from decorative keystone using a specified poultice. Keystone to be remoulded using a mortar repair process.
- 6.4.2 Surround to be made good. Any cracks to be filled. Flaking paintwork to be removed and new paint applied in a neutral colour.
- 6.4.3 Doors to be repainted. Loose paintwork to be sanded back. Should defective timberwork be exposed during this process, it should be splice-repaired.

6.5 Front Railings

- 6.5.1 Existing plinth walls will be steam cleaned and vegetation will be removed. Open joints, loose joints or cementitious joints will be raked and repointed with lime mortar. Railings will be primed and painted. Localised repairs may be carried out using, if necessary.

6.6 Coal Chute to Basement

- 6.6.1 To stop water flowing into the basement via the redundant coal chute, the external pavement must be lifted to allow for remediation. Following the provision of a cordon, the public pavement's paving slabs will be lifted and any underlying hardcore or substrate will be removed. The structural engineer and conservation consultant will inspect the top of the coal chute and propose remediation. Following repairs, the public pavement will be made good. Please note that College Road will need to be temporarily blocked to vehicular traffic during this process.

7 INTERNAL CONDITIONS

7.1 Floors:

- Floor tiles to entrance hall and stairhall are coated in high-gloss varnish (shellac).
- Replacement timber floorboards to first and second floor landings are in good condition.
- Replacement timber floorboards to Shaw Room at ground floor are in good condition.
- Carpet covers flooring to rooms and spaces at first and second floor levels.
- Unlevel poured concrete floor to basement.
- Replacement pre-cast concrete plank and concrete block system to ground floor, north end of children's reading room is in good condition.

7.2 Skirting Boards:

- Run-in-situ plaster skirting boards to entrance hall and stairhall. Localised flaking paintwork. Renewed timber skirting boards to first and second floors in good condition. Check Shaw room.

7.3 Walls:

- Walls in good condition generally. Wall plaster has been renewed in many areas particularly on upper floors.
- Cracked and boast wall plaster to north and south walls of stair core at second floor level. Wall plaster is not original and will be replaced with lime plaster and breathable paint.
- Horizontal cracks to walls/wall plaster to third-floor archive. Vertical cracks to heads of segmental archways in spine walls of third-floor archives. Wall plaster is not original and will be replaced with lime plaster and breathable paint following any structural repairs specified by structural engineer.

7.4 Ceilings:

- Original Shaw room and entrance hall ceilings are lath and plaster and are in good repair.
- Ground floor ceilings are renewed and in good condition.
- First floor and second floor ceilings are renewed and in good condition.

7.5 Primary Staircase

- Staircase timberwork is generally in good condition.
- Replacement wall string in area of second half-landing.
- Deflection of flights rising and descending from second half-landing. Previous remediating comprised installing a pair of steel rods from the roof space. Rods are not in tension and may need to be tightened under the advisement of the structural engineer.

7.6 Secondary Staircase

Concrete stairs in good condition. Wall plaster in good condition. Steel railings in good condition.

7.7 Photographs of Internal Issues



Fig.40: Vaulted basement room below the entrance hall. The rubble wall at the end of the chamber retains the soil behind and has the potential to allow water to ingress.



Fig.41: Water is a constant issue for the coal chute located at the west end of the basement. The concealed opening lies beneath the public pavement and allows water to flow freely into the basement.



Fig.42: Area of public pavement that conceals the coal chute opening. Water ingresses from this area to the basement.



Fig.43: A view up the coal chute towards the inadequately covered opening.



Fig.44: Shellac-coated quarry tiles to stairhall floor.



Fig.45: Shellac-coated encaustic tiles to entrance hall.



Fig.46: Run-in-situ skirting with flaking paintwork.



Fig.47: Treads of stairs projecting forward.



Fig.48: Rods installed to suspend staircase.



Fig.49: Rods are suspended from attic level.



Fig.50: Cracked plasterwork to stairwell. Plasterwork was replaced during renovations.



Fig.51: Cracked plasterwork to stairwell. Plasterwork was replaced during renovations.



Fig.52: Cracking to early and replacement plasterwork at the stairs.



Fig.53: The timberwork of the stairs is by-and-large in good condition. This image shows how the suspension rods support the second half-landing.

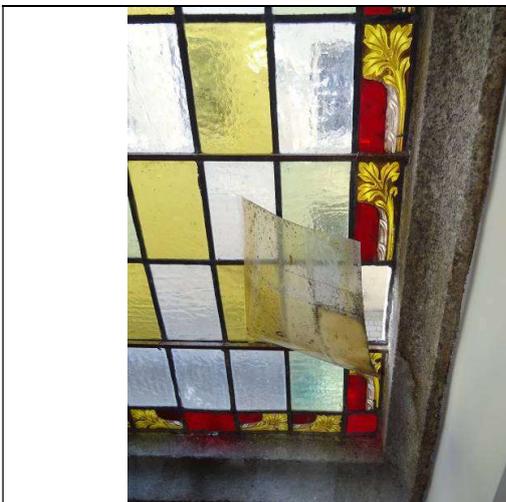


Fig.54: Missing pane to window

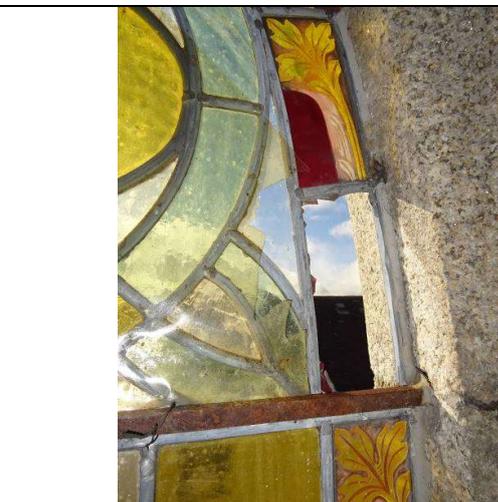


Fig.55: Broken panes

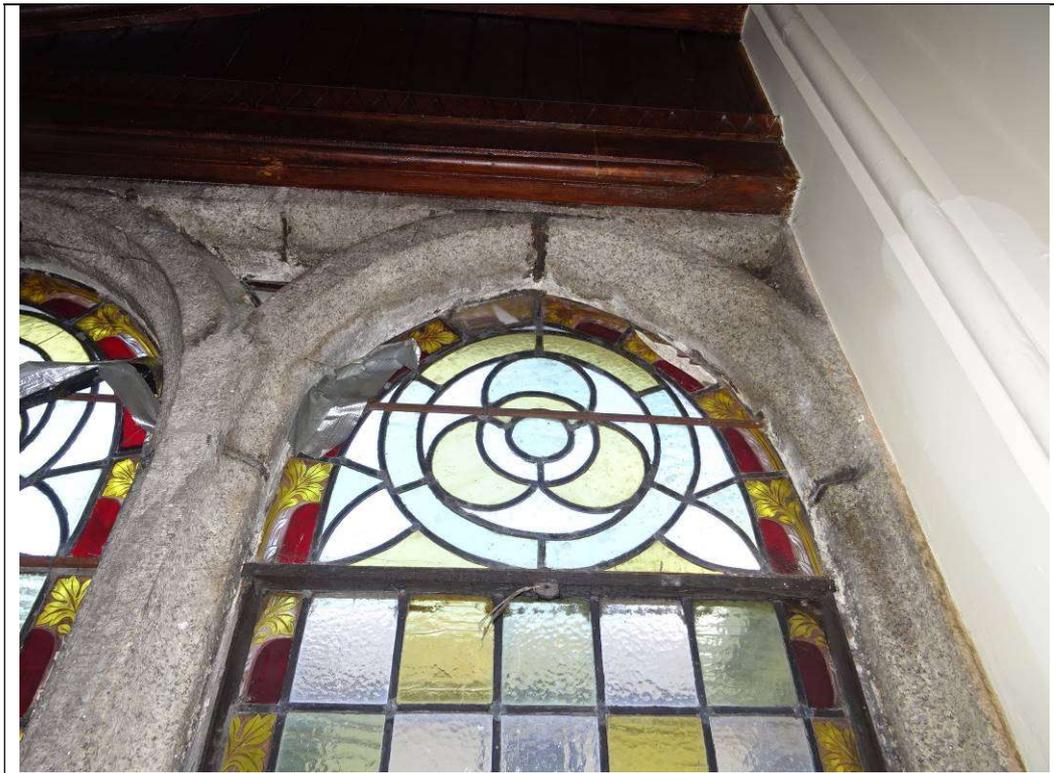


Fig.56: Tape used to secure iron bar. Broken margin panes above.



Fig.57: Corroded surface of horizontal iron bar.



Fig.58: Open joint to ashlar joint of cut-stone granite.



Fig.59: Structural cracking to archway at second floor archive.



Fig.60: Horizontal cracking to top of front elevation at second floor.

8 INTERNAL RECOMMENDATIONS

8.1 Basement:

8.2 Tiled Floors of Entrance Hall and Stairhall:

Remove shellac varnish from entrance hall and stairhall using poultice following trial tests. Abrasive cleaning technique should be avoided.

8.3 Principal Staircase:

Assess suspension mechanism within roof space and adjust to ensure that the rods are engaged. Renew non-original cracked plasterwork to stair core walls. Joiner to reengage risers of steps that presently project forward. Stairs to basement to be repaired or renewed as required.

8.4 Internal Walls:

There is significant cracking of plaster at third floor and within the stair core of the historic stairs. All plaster in these areas is modern. Plaster will be removed and replaced with a lime-based plaster and breathable paint.

8.5 Sash Windows

Sash windows will be removed, splice-repaired if necessary, prepared, repainted and re-hung. New putty and sash cords will be supplied where needed. Existing glass will be retained. Discrete draught proofing will be provided (Ventrolla style system). Timber shutters will be repaired and returned to working order. To reduce air leakage, plywood boards behind the shutters will be removed and a lime plaster will be applied.

8.6 Granite Tracery Windows and Leaded Lights

Decorative windows require remediation by a specialist contractor. Open joints in the granite tracery will be raked and re-pointed with lime mortar. Replacement pane of glass will be supplied to match damaged areas. Iron bars will be treated and painted. Some areas of lead comes may need to be repaired.

8.7 Insulation

Insulation will be provided to the floor of the roofspace between joists. Insulation will be laid following the completion of all mechanical and electrical interventions and the reslating of the roof. Insulation will be installed to the full depth of the joists with care to ensure there are not gaps. Insulation must be hygroscopic to prevent any moisture being trapped against timberwork.

Insulation will be provided to floor of children's large reading room at ground floor. Carpet, hard board and floorboards to be lifted. 50mm x 25mm battens will be installed to each side of each joist. Battens will support batts of wood fibre between joists with an air gap between the top of the insulation and bottom of floorboard. All debris to be cleared from subfloor area and vents to be unblocked as necessary. Floorboards to be reinstated with superficial floor covering over.

9 CONSERVATION SPECIFICATIONS

9.1 Conservation Methodology

This chapter does not contain all specification/details/quantities requirements and solely relates to the conservation requirements. This document should be read in conjunction with the documentation of the rest of the Design Team.

9.2 Conservation Best Practice

Conservation and alteration of the former Presentation Convent is guided by the ICOMOS Venice and Burra Charters. All personnel and sub-contractors must have relevant experience in conservation projects.

9.3 Drawings

Drawings produced by Carrig are to be read in conjunction with this specification and can be found in separate bound volume. The drawings contain information regarding the general location of much of the remedial work detailed within. Please refer to any documents by the Architect & Engineers.

9.4 Sample Panels & Workmanship

Prior to commencing work the following sample panels/materials will be presented for the approval of the Design Team:

- Sample repair of chimneystack
- Sample natural slate
- Sample removal of cementitious render
- Sample re-rendering in lime render to smooth finish with ruled-and-lined scoring
- Sample window repair
- Sample external front door refurbishment
- Sample removal of later coverings to floorboards - floors to be inspected and recorded by the Conservation Consultant following removal of floor coverings
- Sample lifting of floorboards
- Sample re-laying of floorboards
- Sample replacement timber floorboards
- Sample repair to ceiling
- Sample replastering
- Sample refurbishment of internal window joinery
- Sample refurbishment of internal doors
- Sample staircase joinery repairs and refurbishment

9.5 Heritage Induction

All operatives must receive 'Heritage Awareness Training' delivered as part of their site induction - this will include site specific training on the significance and the sensitivities of the work.

All operatives must sign documentation to confirm that the 'Heritage Awareness Training' has been delivered and received.

Only operatives who have undertaken the 'Heritage Awareness Training' will be permitted to work on site (including all main and sub-contractors).

9.6 Supervision & Personnel

Adequate site supervision is to be provided by the contractor at all times, by personnel experienced in all aspects of the conservation and refurbishment of historic buildings. The foreman, supervisor or supervisors, which are to be named at tender stage, are to retain their positions for the duration of the contract unless otherwise stated by the client. Any change in supervision personnel shall be immediately reported to the Design Team, any change of supervisor must be pre-approved by the inspecting authority.

Subcontractors are to be named and details of relevant experience furnished to the Design Team for approval prior to being engaged.

Only personnel who have the relevant practical experience of the task being carried out are to be employed. Proof of personnel training must be supplied by the contractor, if requested.

Operatives who receive specific conservation training from the Design Team (e.g. cleaning of stonework/plaster repair) shall remain with these tasks for their duration, maintaining a consistency of approach and knowledge.

9.7 Materials & Workmanship

If the contractor observes an adverse reaction by any products applied to the fabric of the structure, then this aspect of the work shall be immediately discontinued, and the Design Team's advice sought.

The use of any product other than those specified in this document is to be approved by the Design Team prior to commencement of work. Materials are to arrive on site unopened and bearing both the product and manufacturers name in a legible form.

The Design Team reserves the right to sample and inspect any products and the right to charge the contractor for any work required to check the suitability of any proposed product changes.

All materials and products will be stored in a clean, dry environment where there is no risk of damage. The product requirements set out by the manufacturer are to be adhered to. Nb. site goods and materials must not be stored against or touching either the historic building or entrance railings.

The contractor shall forward a copy of relevant Product Data and Material Safety Sheets to the Design Team. All personnel are to familiarise themselves with these.

All activities are to be in compliance with the relevant codes and government regulations. It is the responsibility of the contractor to ensure that this is the case.

9.8 Weather

Any activities involving the application of water/water-based products to the structure are not to proceed if the air temperature is either 4° Celsius or falling. Such activities include those which employ the use of water-based cleaning products.

9.9 Safety

In order to avoid or reduce risks to health and safety and to ensure that best practice is implemented, all contractors must provide a comprehensive Safety Statement in compliance with the Safety, Health and Welfare at Work Act 2005 and associated legislation.

All work shall be carried out in a safe manner and in compliance with all local authority and government safety regulations. All product safety information is to be available on site and is to be read and fully understood by all personnel assigned to the use of such product.

Operatives are to use the appropriate protective clothing and equipment where required. Public roads, footpaths and the surrounding area are to be protected, as necessary, from chemical run off.

All required first aid and safety equipment is to be stored on site where it is easily accessible to those who may require it. All operatives are to be familiar with the use of this equipment.

All hazardous and polluting effluent is to be disposed of safely and in accordance with the relevant safety regulations.

Clear away all dirt, rubbish, spoil, offensive matter and superfluous materials from time to time or as directed and at completion. Do all necessary scouring, washing and keeping clean as the work proceeds. All drains and gutters are to be kept free from debris at all times.

All site practices must comply with the current Health and Safety initiatives and Regulations.

Site workrooms and temporary sanitary facilities are to be agreed with the client prior to commencement on site.

9.10 Signage

Where possible site signage must not be fixed to the historic structure but placed on plywood hoarding or other modern materials. Where fixing to the historic structure is unavoidable, use non-ferrous fixings housed within existing mortar joints.

9.11 Sequence of Works

The sequence of conservation repair works shall be agreed during pre-construction discussions and in consultation with the Design Team.

9.12 Protection of Historic Fabric

9.12.1 Protection of Staircase

The staircase shall be protected from foot traffic by provision of a layer of dry hessian, soft board and 13mm plywood sheeting with sufficient projection to avoid damage to the nosing. Handrails and balusters shall be encased ensuring no fixings attach to or place pressure on the historic fabric.

9.12.2 Internal Doors

All internal historic doors and timber architraves shall be protected by the provision of one or a combination of the following: sheet hoarding, industrial bubble wrap, corrugated cardboard, edge board card protectors (similar used to protect corners on pallets) and u-shaped foam edge protectors.

9.12.3 Historic Fireplaces

All historic fireplaces shall be boxed out in plywood for the duration of the works - ventilation shall be provided to ensure adequate air movement. Fixings shall be to the surrounding wall plaster and not to the fireplace surrounds.

9.13 Scaffolding

The Design Team and PSDP's documentation in relation to the scaffold shall be read in conjunction with the following section.

A suitable area of the scaffold, engineered to take the required loadings, shall be designated for the storage of the slate and stone. Temporary designated walk-way planking shall be provided and must be used when circulating within the roof space.

9.13.1 General

All people with responsibilities for supervision of scaffolding work shall be familiar with the HSA Code of Practice for Access and Working Scaffolds and with I.S. EN 12811.

The scaffold is to be designed so that all the specified work can be easily and safely carried out. All hoisting and access facilities are to be included. The scaffold is to be erected and maintained in accordance with the HSA Code of Practice for Access and Working Scaffolds.

The scaffold shall be dressed in a protective weather sheeting to shield the building from the elements and assist in the curing of the lime work.

All efforts shall be made to secure the scaffold and site from unauthorised access including hoarding and removable ladder access.

9.13.2 Conservation Focus

Scaffold poles are to be clean, rust free and neatly capped to prevent direct contact with the building and injury to workers. Rust stains on the building must be prevented.

Where the scaffold abuts the structure, a timber packer must be inserted to avoid physical damage.

Scaffolding shall not be tied in or supported from any part of the structure, except at the direction of the Design Team (where approved, fixings must be of stainless steel) all areas shall be made good following dropping of the scaffold.

Scaffolding is to be erected and carefully dismantled to avoid all damage whatsoever to the building and historic ancillary structures.

10 EXTERNAL SPECIFICATIONS

10.1 Specified Products

Specifications are generic in criteria by reference to the requirements of regulation 23 of the procurement regulations (SI 329 of 2006).

The specifications in relation to product/system performance requirements and compliances can be achieved by a range of products/systems and no compliant tender will be rejected on the basis that it does not comply with any product/system references where incorporated into specifications and drawings being intended only for guidance aesthetically where noted as similar in appearance (S.I.A).

It is proposed to carry out conservation repairs to the former Presentation Convent, repairing where possible and replacing with materials to match where necessary, in accordance with conservation best practice and to the approval of the conservation consultant.

10.2 Biological Growth

Biological growth can trap moisture and prompt decay. All plant life and biological growth shall be carefully removed by hand taking care not to disturb surrounding historic fabric.

Where plant life cannot be removed completely by hand without disturbing masonry, a biocide may be specified, consult with the inspecting authority for further direction.

10.3 Roof

Roof repairs to include chimneystack and flashing repairs, the re-slatting of the roof, provision of new breathable underlay, refurbishment of rainwater goods, and installation of internal insulation.

9.1 Roofing Pitch

In general, the historic pitch should be maintained unless otherwise stated.

9.2 Stripping of Slates

Any modern/inappropriate replacement slate shall be disposed of according to regulations.

The existing historic ridge tiles shall be carefully salvaged and stored for re-use.

Stripping shall be in accordance with BS 6187 and site staff responsible for supervision shall be experienced in the assessment of risks involved and methods of stripping to be used.

9.2.4 Protection of Internal Areas

Stripping of the roof area shall be carried out on a phased basis to ensure that the entire building is not exposed at any one time.

The contractor shall provide temporary weathering's to be installed each day at the close of works or when otherwise necessary to protect against rainwater ingress.

During stripping works the contractor shall prevent the overloading of any ceiling or floor areas due to the accumulation of debris.

Temporary storage of waste material in roof spaces or within buildings is not permitted (unless otherwise agreed with the inspecting authority).

Temporary designated walk-way planking shall be provided by the contractor and must be used when circulating within roof space.

9.2.5 Recording of the Existing Slating Arrangement

The existing slate is arranged in diminishing courses - re-slatting of the roof areas must faithfully replicate the original pattern/arrangement.

Before stripping commences, record the number of courses on each roof pitch and the slate length/grade of each course.

9.2.6 Stripping of Existing Roofing Fabric

The existing roofing fabric (to include ridging, slate and battens) shall be stripped from the roof salvaging sound natural slate and ridging for reuse.

- a) The existing ridge tiles are to be carefully removed, assessing condition during removal and salvaged for reuse.
- b) The existing slate is to be carefully stripped using a slate ripper.
- c) Slates are to be removed with a view to reuse.
- d) Cracked or delaminated slates shall not be used and shall be disposed of.
- e) The existing timber battens, underlay & other waste material shall be disposed of.
- f) The contractor shall quantify salvaged slate and ridge tile numbers during the stripping process to confirm the level/extent of replacement.

9.2.7 Evaluating Sound Slate

- a) All sound slates must be tested for soundness, graded and stored for reuse taking care to avoid damage.
- b) Double-handling of the slate shall be avoided where possible.
- c) A 'ring-test' shall be carried out to ascertain sound slates. Hold the slate by a corner and tap with a hard object. Where a clear ring resonates this should be considered sound/salvageable. Where a dull sound resonates this slate shall be discarded.

9.2.8 Storage of Salvaged Slate

- a) All sound slates shall be stacked on the scaffolding taking care to avoid damage.
- b) A suitable area of the scaffold, engineered to take the required loadings, shall be designated for the storage of the slate.
- c) Slates shall be stacked according to size and stacked vertically on their heads.
- d) Provision shall be made for air circulation when stacking slate.

9.2.9 Storage & Removal of Salvaged Ridging

- a) All sound historic ridging tiles shall be stored on timber pallets/crates.
- b) Historic mortar shall be removed from the ridge tiles prior to palletising.

9.3 Roofing Timbers

9.3.1 General

Following roof stripping, a further inspection of the exposed individual timber elements (rafters, purlins, wall plate & valley boards) shall be carried out by the structural engineer following stripping of the slate to confirm the level/extent of repair.

9.3.3 Replacement Timber

- a) Timber repairs/replacement should be carried out using material from the same species where possible and from a reputable source. Well-seasoned pressure treated timber shall be introduced to replace missing or damaged timbers (Class 4 BS 8417).
- b) Timber shall be obtained from well managed forests or approved architectural salvage yards - contractor to provide documentary evidence (which has been or can be independently verified) regarding the provenance of all timber supplied.
- c) Moisture content of the replacement timber must closely match the original to prevent differential distortion. In general, the moisture content of timber at time of installation should not be more than 20% for heated spaces and 24% for unheated spaces.
- d) Softwood shall be graded as per the following:

Timber of a target/ finished thickness less than 100 mm and not specified for wet exposure: Graded at an average moisture content not exceeding 20% with no reading being in excess of 24% and clearly marked as 'DRY' or 'KD' (kiln dried).

Timber graded undried (green) and specified for installation at higher moisture contents: Clearly marked as 'WET' or 'GRN'.

- e) Defects such as warping, bowing, twisting or cupping of timber not to exceed limits established in BS 4978 or BS EN 14081-1 for softwood, or BS 5756 for hardwood.
- f) Sapwood must not be specified as this is more susceptible to insect infestation.
- g) The cutting and machining of timber shall be carried out as much as possible before treatment of the timber. Where timbers have been excessively processed these shall be retreated at saw cuts or where planed. Where surfaces are exposed by minor cutting/drilling the area shall receive two flood coats of a solution recommend by the main treatment solution manufacturer.

9.3.4 Storage of Timbers

- a) Keep all timber dry and do not overstress, distort or disfigure sections or components during transit, storage, lifting, erection or fixing.
- b) All timber components shall be stored under cover, clear of the ground and with good ventilation.
- c) All truss rafters shall be kept vertical during handling and storage.

9.3.5 Repair Procedure

Nb. The roofing timbers shall be allowed to dry out for a period prior to commencement of repair works.

- a) A joiner with conservation expertise shall carry out this element of the work.
- b) Decayed timbers shall be repaired/replaced as necessary using a mixture of traditional techniques and honest repairs.
- c) Repairs/replacement of individual members shall be fully completed before progressing to the consecutive member to limit stress on the surrounding roofing fabric. It may be necessary to temporarily strap/brace timber elements/trusses during repair works.
- d) Complete replacement of existing timber members shall only be considered where these have deteriorated to such an extent and where directed by the Structural engineer.
- e) Repair of the roof shall take account and respect historic undulations in the existing roof (note that where undulations are excessive and where these are deemed to risk the

weathertightness of the roof it may be necessary to amend the existing roof structure through the addition of shims etc).

- f) All replacement timber shall in general replicate the original detail and dimensions, unless otherwise specified by the structural engineer.
- g) Ridge and valley boarding shall be repaired/replaced to match existing (extent of intervention to be confirmed on site by the inspecting authority).
- h) Supplementary rafters to be added as per the structural engineer's instruction.
- i) Splice repairs to be carried out as per the structural engineer's instruction. The decayed section of timber shall be cut out and new timber spliced in. Fixings shall be of stainless steel with traditional wedges or adhesives used between timber surfaces.
- j) Works to purlins and trusses to be carried out in-situ. Truss footings shall be cut back and additional timber wedges installed to improve irregularities and reduce stresses in the roofing plane. Temporary removal and storage of rafters (suitable covered area) will be required to facilitate works. Where it has been agreed to remove elements, these must be tagged with a unique reference number for identification and accurate re-assembly. Rafters to be replaced in original position following works to purlins/trusses.
- k) Existing wall plate to be repaired/replaced (extent of intervention to be confirmed on site by the inspecting authority).
- l) Fitch plates/shoes and other hybrid metal repairs must be non-ferrous in material. Fixings shall be of stainless steel. These shall be installed as per the structural engineer's detail.
- m) Ensure adequate air circulation around all beam ends and provide a vapour permeable membrane between timber and masonry.

9.3.6 Preservative Treatments

- a) All new timber shall be preserved as per section Z12 and the Wood Protection Association Commodity Specification C8.
- b) All existing large retained built-in timbers (wall plates & truss ends) shall be treated liberally in situ by drilling and injection method with an approved insecticide and preservative treatment (refer to structural engineer for product specification).
- c) All remaining roofing timbers shall be treated liberally in situ by liberal method with an approved insecticide and preservative treatment (refer to structural engineer for product specification).
- d) The products shall be applied in accordance with statutory conditions of approval given on product labels and as manufactures' recommendations.
- e) Prevent staining to surrounding finishes and furnishings during treatment - any damage to made good by the contractor to the satisfaction of the inspecting authority.
- f) Take care not to contaminate supplies/tanks - note that live water tanks are housed in a number of roof areas.
- g) Electrical equipment and supplies shall be isolated to prevent the ingress of treatment liquids/fluids.
- h) Decayed timber elements or infected material which has been identified for removal, by the inspecting authority, shall be incinerated to prevent the spread/re-infestation of timbers.

9.5 Underlay

Install a new vapour permeable non-woven polyethylene/polypropylene composite sheeting.

9.5.1 Replacement Underlay

- a) The manufacture and product reference shall be the contractor's choice and shall be black in colour. This must be a vapour permeable non-woven polyethylene/polypropylene composite sheeting to BS EN 13859-1.
- b) The underlay shall be class D fire rated.
- c) Water vapour transmission shall not be less than 0.03m.
- d) Resistance to water penetration shall be class W1.
- e) Tensile strength shall not be less than longitudinal 400 N/50 mm, transverse 330 N/50 mm.
- f) Tear resistance shall not be less than longitudinal 400 N, transverse 300 N.
- g) Weight (mass per unit area) shall be 130 g/m².
- h) Resistance to wind uplift shall be greater than 1600 N/m².

9.5.2 Procedure

- a) The underlay shall be handled carefully and must not be torn or punctured during installation.
- b) The underlay shall be laid parallel to the eaves maintaining a constant tautness.
- c) The minimum head-lap shall be 150mm.
- d) The minimum vertical laps shall be 100 mm wide, coinciding with rafters and securely fixed.
- e) The fixings shall be galvanized steel, copper or aluminium clout head nails.
- f) Where exposed at the eaves an external (UV resistant) underlay shall be used.
- g) Use proprietary underlay seals or cut underlay to give a watertight fit around pipes and components or other penetrations.
- h) Ensure that ventilation paths are not be obstructed.
- i) Where the underlay may sag and form a water trap between the fascia or at eaves level it should be supported by a wedge-shaped timber fillet or other means of support - underlay shall be installed so that there will be no entrapment or ponding of water.

9.6 Insulation

9.6.1 Area

The existing loft insulation shall be carefully removed, and new insulation installed to the attic space.

9.6.2 Product (Cold Roof - above the ceiling)

- a) The insulation batt shall be 100% pure sheep's wool with Class O fire rating.
- b) The batt thickness shall achieve a minimum u-value of 0.16 W/m²K (typically this requires a depth of 250mm of sheep's wool).
- c) The product shall be hygroscopic and able to absorb moisture without slumping.

9.6.4 General

- a) Remove and discard existing insulation.
- b) Before laying new insulation, clean the space thoroughly removing any items or debris.
- c) An industrial grade vacuum cleaner with brush attachment shall be used to clean between ceiling joists taking care not to damage plaster keys.
- d) Reroute electric cables above insulation - electric cables which overlay the insulation shall be sized accordingly. Where the routing of cables within the insulation layer is unavoidable this shall be encased in safety conduit.
- e) Ensure that any gaps around pipes/cables and fittings that penetrate the ceiling are sealed to minimise air leakage and the formation of water vapour.

9.6.5 Cold Roof (insulating above the ceiling)

- f) Lay the insulation in two layers, the first batts shall be laid between the ceiling joists with a second layer laid over (perpendicular to) the ceiling joints.
- g) Continue the batt to the edge and if possible, run over the wall plate to minimise thermal bridging while maintaining a 50mm gap at the eaves for ventilation.
- h) Batts shall be cut and not torn ensuring that these are slightly wider than the ceiling rafters to reduce gaps.
- i) The batt shall lie flat on the top of the ceiling to minimise air voids.
- j) Once laid, cover the insulation with a breathable membrane or building paper, taping any overlaps.

9.6.7 Junctions with Masonry Walls/Chimneys

- a) Ensure that insulation is separated from damp masonry or chimney stacks using a vapour permeable membrane.
- b) Thermal bridging at junctions with masonry walls or chimney stacks should be avoided by insulating the gap between the last ceiling joist and the wall/chimney - the insulation shall be turned up the against the wall to a height of 225mm.

9.6.9 Loft Access Hatch

- c) Provide a proprietary draft proofing seal at the loft access hatch.
- d) Insulate over the loft access hatch to the same degree as the remaining attic area.

9.6.10 Water Tanks

- e) All water tanks should be insulated however the area below the water tanks should be kept free of insulation - the insulation to the sides and top of the water tanks needs to be lapped with that over the ceiling joists.
- f) Enclose around the tank using rigid insulation ensuring that the loft insulation is turned up and lapped over the edges to reduce the risk of thermal bridging.
- g) Ensure clear access is maintained to emergency valves etc.
- h) Ensure all feed and discharge pipes are encased or wrapped in insulation.
- i) The lids to the water tanks must be tight fitting to remove potential sources of water vapour in the roof space.

9.7 Ventilation

Discrete (colour matched) in-line slate vents shall be installed to provide ventilation.

9.7.1 Product

- a) A sample slate vent shall be provided for approval by the inspecting authority.

9.7.2 Procedure

- a) Refer to BS 5534 for guidance with regards to amounts of ventilation.
- b) Install as per the manufacture's method statement
- c) Ensure free passage of air over insulation.
- d) Ensure that no rainwater can penetrate within the building - carry out rainwater test to ensure that there is no water ingress associated with the vents.

9.8 Re-Slating of Roofs

9.8.1 Area

Existing salvaged slate shall be used during re-slating, augmented where necessary, with new natural slate to match.

It is anticipated that 70% of the existing historic slate will be sound and shall be salvaged for re-use.

9.8.2 Replacement Slate

Replacement slate shall be to match the dimensions of the existing and shall be first quality Penrhyn 'Blue Bangor' natural Welsh slates and shall be S1 Grade, or comparable, free of defects, potentially damaging inclusions and iron pyrites, with punched rather than drilled nail holes.

The inspecting authority may consider salvaged slate as a suitable replacement providing that this is of exceptional quality and from a verified reputable source.

Contractor to provide sample of replacement slate for approval by the inspecting authority.

9.8.3 Procedure

Slate shall be laid following the original slating arrangement and must faithfully replicate the original pattern, head and tail laps.

- a) Slating workmanship shall conform to BS 5534 and BS 8000 Part 6.
- b) The setting out shall be to true lines and to provide a regular overall appearance, with neat fit at edges, junctions and features taking account of historic undulations in the existing roof (note that where undulations are excessive and where these are deemed to risk the weathertightness of the roof it may be necessary to amend the existing roof structure through the addition of shims etc).
- c) Slating shall start at the eaves and fixed diagonally and up the roof slop ensuring each slate is fixed with 2 no. nails.
- d) Where re-sizing/trimming is necessary, slates are to be cut using traditional hand tools to avoid a sawn, finish. Ensure that cut slates are not less than 150 mm wide.

- e) Top course and the second course from the top shall be of such a dimension as to maintain the correct lap. The top course slate shall be nailed and bedded at the head in mortar.
- f) The eaves course slates shall be fixed with tails projecting 50mm over gutter or to centre or gutter, whichever dimension is the lesser.
- g) A double course (undercloak) of slates shall be laid to the eaves supported on a continuous tilting fillet.
- h) Allow slates to project beyond face of wall at gable verge between 38-50mm or as other otherwise instructed by the inspecting authority - Nb. on heritage structures it may be preferential to match the historic position even where this falls outside the 38-50mm zone.
- i) Slating should always be laid perpendicular to the battens and where the eave is not square the tails of the eaves slate shall be dressed to accommodate the raking line.
- j) Slates shall be laid to tilt away from verges and an extra wide slate shall be used at verges to maintain bond.
- k) Vertical joints between slates shall be 4mm wide.
- l) Where slate thickness is not uniform, slates are to be laid so that the thicker end of the slate is the tail. Thicker slates shall be used on the lowest courses and slates within a course shall be of even thickness to ensure that these are consistent in any one course. Slates are to lie evenly without rocking, avoiding sudden changes in thickness and gaps between courses.

9.8.4 Fixings

- a) Slate shall be provided pre-holed however where nailing holes are to be made, they shall be punched from the back of the slate allowing for countersinking of the nail, with care taken to avoid undue spalling. Drilling of nail holes will not be allowed.
- b) The slate shall be secured to the softwood timber battens using two copper clout slating nails to BS 1202-2 and shall be of 11 gauge and 20mm to 25mm longer than the thickness of two slates.

9.9.8 Battens

- a) Install replacement roofing battens to centres ensuring that the coursing of the slate provides from the reinstatement of the existing arrangement.
- b) The battens shall be sawn softwood to match existing.
- c) The species and factory pre-grading shall be in accordance with BS 5534, clause 4.11.1 with permissible characterises and defects not to exceed limits in BS 5534, Annex D.
- d) Moisture content at time of fixing and covering shall not exceed 22%.
- e) The battens shall be preserved as per section Z12 and the Wood Protection Association Commodity Specification C8.
- f) The length of the battens shall be sufficient to span three rafters with butt joints positioned centrally on rafters.

- g) Fixings shall be galvanised round plain shank nails with each batten fixed securely to each rafter. Fixings shall be at least 30mm longer than the thickness of the batten.
- h) Where battens are fixed to masonry these shall be set out in straight horizontal lines, aligned on adjacent areas with fixing centres no greater than 400 mm.
- i) Batten ends shall be fully supported.

9.10 Replacement of Ridge Tiles

9.10.1 Area

Existing salvaged ridge tiles shall be used during re-ridging, augmented where necessary, with new clay ridge tiles to match existing.

It is anticipated that 90% of the existing historic ridge tiles will be sound and shall be salvaged for re-use.

9.10.2 Replacement Ridge Tiles

Replacement ridge tiles shall be to match the dimensions of the existing and shall be blue clay free of defects.

The inspecting authority may consider salvaged ridge tiles as a suitable replacement providing that these are of exceptional quality and from a verified reputable source.

Contractor to provide sample of replacement slate for approval by the inspecting authority.

9.10.3 Procedure

- a) Clean all existing historic mortar from the ridge tiles.
- b) The tiles shall be bedded in the following mortar mix (without the need for separate pointing) - the mix shall be 2:1 Sand: Lime NHL 5.
- c) Lay a band of mortar on each side of the ridge and at each end.
- d) Carefully set the tiles into the mortar and bed them down.
- e) Remove excess mortar with a trowel, taking care not to smear the roof tiles or the slates.
- f) Protect the ridge mortar from rainwater until sufficiently cured - there must be no leaching of lime onto the slates.

9.12 Lead Roof Flashings

9.12.2 General

- a) All lead work is to comply with BS 6915, CP 143 Part 2 and the recommendations of the Lead Sheet Association's manual 'A Guide to Good Building Practice' Volumes 1, 2 & 3.
- b) Flashings shall be fitted immediately after slating and shall be dressed and fixed to provide a secure, free draining and completely weathertight installation.
- c) The dressing of lead shall provide for straight and regular bends/junctions, leaving sheets free from ripples, kinks, buckling and cracks.
- d) Any sharp edges shall be removed as works proceed.
- e) In-situ lead welding shall only be permitted subject to completion and approval of a 'hot work permit' form and compliance with its requirements.

- f) Care shall be taken to protect leadwork from staining/discoloration and/or damage from subsequent works (particular care shall be taken with adjacent lime mortar works).
- g) Patination oil shall be applied to lead on the same day that this is fixed in one direction and in dry conditions.

9.12.3 Material

New lead shall be milled lead sheet complying with BS 1178 & BS EN 12588 to the following codes:

- a) Flat roof - 7 or 8
- b) Parapet, box & tapered valleys - 6, 7 or 8
- c) Chimney flashings - 5 or 6
- d) Hip & ridge flashings - 6, 7 or 8
- e) Pitched valley gutters - 6 or 7
- f) Weathering's to cornices, parapet walls & projections - 6 or 7
- g) Apron & cover flashings - 5, 6 or 7
- h) Soakers - 3 or 4

All lead shall be labelled to show thickness/code, weight and type.

9.12.4 Rainwater Goods

Existing historic cast-iron rainwater goods to be refurbished and reinstated. Modern rainwater goods to be replaced with cast-iron units to match profiles of the buildings original gutters and downpipes.

10.3.1 Area

- a) Carefully take down all existing rainwater goods (gutters, hoppers, brackets, and downpipes) for reuse.
- b) Refurbish and reinstall existing sound elements.

10.3.2 Fixing of Rainwater Goods

- a) Existing historic fixings to be reused.

10.3.3 Maintenance Check

- a) Gutters and downpipes are to be kept free of debris and cleaned out on completion.
- b) Following re-installation, all rainwater goods shall be inspected to check for water tightness. This shall be achieved by forcing water, supplied by a hose, through the pipes while temporarily blocking the outlet.
- c) In the event of leaks, the pipes shall be taken down, refurbished and re-fixed prior to carrying out a further water tightness check.

10.3.4 Refurbishment of Rainwater Goods

Existing rainwater goods will be prepared and re-painted.

10.3.5 Product

The primer shall contain Ethyl methyl ketoxime and Silicate extenders in a solution being less than 10% concentration.

The top coat shall contain xylene, a mixture of isomers and Naptha.

The colour will match the existing.

10.3.6 Preparation

- a) Remove any flaking paint, rust or scale using a wire brush to SIS 05 59 00 (ST2/ST3) standard or Carbide Scraper.
- b) All edges of old coating must be well feathered. Sound old coating shall be abraded to key in the new coat.
- c) Remove all dust, debris etc. from the structure and vicinity of the site.
- d) Oil grease, chemical and salt contamination must be removed.

10.3.7 Application of Coating

- a) Apply by brush.
- b) Power mix product thoroughly before use.
- c) Use immediately after mixing.
- d) After first application of product, leave for a minimum of eight hours before proceeding.
- e) Apply second application, leaving for a minimum of eight hours and a maximum of 48 hours before proceeding.
- f) Apply coloured finish coat (to be agreed with design team).
- g) The manufacturer's specified film thickness for each coat is to be achieved in all cases. Work is to proceed in a sequence that ensures finished work is not spoiled by dust and debris arising from any other work. All work is to be carried out to an approved standard.

10.3.8 Storage

- a) Products are to be stored tightly sealed in their original containers.
- b) Products must not be allowed to freeze.
- c) Products must not be allowed to come in contact with watercourses.
- d) All products shall be stored according to the manufacturer's instructions.

10.3.9 Safety

- a) The manufacturer's materials safety data sheets are to be obtained and a copy of these is to be sent to the inspecting authority.
- b) The instructions in the materials safety data sheet are to be adhered to in all cases.
- c) Operators shall wear protective clothing to prevent product from coming in contact with the skin or eyes or from being inhaled. Atomising sprays are not to be used.
- d) Products are to be used in well ventilated areas only.
- e) Do not artificially heat any of these products.
- f) Procedures for disposal of containers shall comply with all relevant government, local authority and any other relevant regulations.

10.4 Chimney Repairs

10.4.1 Area

Engineer to specify crack stitching repairs to east chimneybreast. Brickwork of external chimneystacks to be repointed with lime mortar to a flush finish. Patches of cement to be removed from brickwork and custom-coloured NHL mortar repairs to be carried out. Flaunching to be repaired as necessary. New galvanised cowls to be installed. Flashing to be repaired.

10.5 Removal of Render from Elevations

10.5.1 Area

Prior to commencing full render removal, trial panels will be satisfactorily removed in the presence of the Design Team. Removal of the remaining areas of render will only proceed following approval by the Design Team and to the standard agreed during trial removal.

- a) Accurate render depth is to be gauged in a variety of locations across the elevations to determine the minimum depth.
- b) A wall chaser with an adjustable blade set to below the minimum depth of the render will be used to cut chase lines into the render to break surface tension.
- c) Care will be taken to not chase into the substrate.
- d) Gridlines will be chased into the render.
- e) Using the grid lines, sections of render will be removed using a bolster chisel and mallet or Kango hammer, taking care to prevent damage to the substrate. The chisel should be struck as parallel to the face of the elevation as possible.
- f) Following the careful removal of the render, sites will be brushed down to remove loose render or dust. All debris must be carefully removed and disposed of.

10.6 Re-Rendering of All Elevations

10.6.1 Area

Following the removal of cement-based render from all elevations, a new lime render will be provided. Sample of render to be approved by Design Team.

10.6.2 Materials and Mixes for Dubbing out and External Lime Render

- a) Samples shall be carried out to determine the most appropriate colour and finish to the render.
- b) The mix for the dubbing out mortar is to be NHL 3.5 at rate of 1:2.5, with well graded aggregate of less than 10mm.
- c) The mix for the 12mm first coat external lime render is to be NHL 3.5 at rate of 1:2.5, using well graded sharp sand with aggregate of less than 10mm. The aggregate shall be well washed Arklow sand free of salt and contaminants. This coat shall be 12mm thick.
- d) The mix for the 12mm second thrown coat shall be NHL 3.5 at a rate of 1:3, with well graded aggregate of less than 10mm.
- e) The mix for the 5mm final coat shall be NHL 3.5 at a rate of 1:3 with a well graded aggregate of particles less than 5mm.

10.6.3 Mixing the Mortars

- a) It is preferable to use a Mortar Mill to mix the materials.
- b) Measuring of material must always be with a gauging box or bucket.

- c) Start with an empty mixer.
- d) Add the dry materials.
- e) Mix dry for at least five minutes.
- f) After five minutes slowly add water until the desired consistency is reached. It is very important not to drown the mix by adding too much water.
- g) Once the desired consistency is reached, mix for a further 20 minutes.
- h) The mix must be used within two hours and then left to set.
- i) The mix, to begin with, should appear rather dry but as mixing time increases the render will become much 'fattier'. If too much water is added the risk of shrinkage will increase and the final strength reduced. Do not use any Plasticisers or other additives.

10.6.4 Protection & Aftercare

- a) The drying temperature should be controlled and drying must not be forced by introducing excessive heating.
- b) Any activities involving the application of lime products are not to proceed if the air temperature is either 4° Celsius or forecast to be falling.

10.6.5 Application Thrown Coats

- a) The aim of this application is to cover all rubble walls with a layer of render.
- b) The maximum thickness should be 6-10mm with overall thickness of both thrown coats at 16mm.
- c) Ensure that surrounding surfaces are well protected prior to proceeding.
- d) Dampen the surface prior to application of the plaster mix.
- e) The coat is to be applied by throwing the plaster from a trowel onto the wall surface. This will remove air bubbles from the mix and ensure the best bond between the plaster and the wall.
- f) Allow to cure for 3-5 days.
- g) This coat should be followed with the second thrown coat consisting of a weaker mix.
- h) The second thrown coat should be keyed and allowed to harden sufficiently to receive the next coat (approx 3-5 days).
- i) As it stiffens it should be pressed lightly into the wall without destroying its natural key and should be kept moist for several days.

10.6.6 Application Finishing Coat

- a) Dampen the second coat in preparation for receiving the top/finishing coat.
- b) A fine spray of water should be applied in preparation for receiving the top/finishing coat.
- c) Using the same mix but with larger aggregate this coat should be thrown on evenly with a harling trowel to a thickness of about four to eight millimetres.
- d) Finish the surface using a combination of wooden and sponge floats and a plasterer's trowel.
- e) The render should not be worked over but should be kept damp until it has cured. All coats should be immediately protected from rain, wind, sun and frost with suitable drapes.

- f) Ruled-and-lined scoring to faithfully copy existing. Trail sample to be presented for inspection by conservation consultant.

10.6.7 Protection & Aftercare of Lime

- a) The area/s must be covered with Hessian and allowed to dry out slowly over a period of three weeks.
- b) The drying temperature shall be controlled and drying must not be forced by introducing excessive heating.
- c) In hot weather it will be necessary to regularly re-wet the sacking.
- d) Lime products must not be used in temperatures of 5 degrees or falling.

10.7 Ventilation Grilles

Original metal ventilation grilles to be inspected and repaired or, where necessary, replaced with like-for-like.

Sample replacement metal ventilation grilles to be presented for approval by the design team.

Where grilles have decayed and debris has accumulated, this debris must be cleared out and the area left clean and in good repair.

10.8 Redundant Fixings

Inappropriate/redundant modern fixings/services: wires, pipes, etc. no longer in use to be removed and any fixing holes to be repaired with lime mortar.

Prior to commencing, trial removal will be satisfactorily carried out in the presence of the Conservation Consultant. All specified areas will be carried out to the same standard as the agreed trial panels. Removal of the remaining redundant fixings will only proceed following approval by the Design Team.

10.8.1 Procedure

- a) Remove all nails, wire fixings and loose bolts from the stone without causing damage to the substrate; do not force removal.
- b) Any bolts that will not come away easily should be drilled in order to remove all traces of the metal.
- c) Any larger bolts that will not come away easily may be core drilled to remove the bolt but keeping the surrounding stone in good condition. The core should be as tight to the size of the bolt as is possible.
- d) All holes are to be repaired using 'Funcosil Restoration Mortar' applied to the manufacturer's specification. The colour of the mortar will match that of the existing stone. Where carrying out repairs matching dust should be mixed into the mortar to obtain a suitable match.
- e) The shape of the repair will match as closely as possible the original shape and profile of the stone.

10.9 Windows

The windows to be sanded, repaired, primed, and painted, and the sash windows to be repaired to working condition, with draughtproofing incorporated.

Conservation repair of all the historic sash windows to the building shall be carried out.

- a) A specialist heritage contractor/window joiner with at least 7 years conservation expertise shall be employed to carry out this element of the work.

10.9.1 Timber Repair

Where windows are to be removed for repair windows shall have metal tags having unique reference numbers (as per schedule) wired onto component parts for identification and accurate re-assembly.

- a) Sand and clean back all joinery to assess and quantify repairs. Avoid stripping by immersion in caustic soda or other similar 'acid bath' treatments.
- b) Where timber decay is found the area shall be carefully repaired/replaced as necessary using traditional repair techniques. A policy of minimal intervention must be adopted at all times - avoid unnecessary trimming of original timber.
- c) Treat any areas affected by wood-boring insects or rot with an approved insecticide and preservative treatment.
- d) Where necessary salvaged pitch pine shall be introduced to replace missing or damaged timbers. This shall match the wood type, moisture content, grain width and grain direction of the existing timber. Avoid mixing timber species.
- e) Replacement of complete sills where necessary shall be in well-seasoned pressured treated Accoya or approved alternative timber.
- f) Where replacing entire components select timber as near quarter sawn as possible and without hairline cracks or shakes. Avoid sapwood and large knots.
- g) All replacement timber shall faithfully replicate the original detail and design.
- h) Splice in new timber (matching in profile and material) with appropriate glue and non-ferrous screws. Spliced repairs should be carried out to direct moisture towards the outer face of the timber and to ensure moisture does not collect on the repair joint. Splice repairs shall include mechanical fixings (timber pegs/non-ferrous screws) in addition to glue. Mechanical fixings shall be made from the inner face of the window.
- i) Bottom rails are vulnerable and here repairs must be durable and have sound mechanical fixings.
- j) Small areas of decay may be built up with an appropriate two-pack system (e.g. epoxy resin or polyurethane type).
- k) The windows shall be stored under cover in a clean area, on edge and suitably supported to avoid distortion or damage prior to installation.

10.9.2 Repair of Historic Glazing

- a) Refer to the window glazing schedule/drawing of each historic window marking the exact location of existing historic glass. Every effort shall be made to retain historic glazing - missing panes or modern replacement panes shall be replaced according to the Design Team's documentation.
- l) Protect historic glass with firm cardboard or thin ply, cut to tightly fit the pane section and marked to indicate the fact that historic glass is in situ.

- m) Where replacement panes are necessary replacement glass samples are to be provided for approval by the Design Team. These shall be accurately cut, with clean and undamaged edges, to suit the sizes of the openings.
- n) Re-glaze following priming of timber to reduce risk of absorption of binding oil from window putty.
- o) Bed glass in butyl and hold in place with non-ferrous sprigs (using sprigging gun).
- p) Finish with linseed oil fore-putty to BS6262 - this shall stop 2mm short of sightline, in a neat triangular fillet (minimum fore-putty shall not be less than 6mm).
- q) The putty shall be finished so that a good weather seal is formed between the putty and the glass.
- r) The new putty shall be left to cure for a month before painting.
- s) All glass shall be at the Joiner's risk until the completion of the Contract.

10.9.3 Reinstallation of Windows & Hardware

- a) Inappropriate sealants shall be removed from the window and gaps between the reveal and timber frame, as well as weight boxes and outer linings shall be caulked using lime mortar or a compound of burnt and boiled linseed oil.
- t) Draught-proofing brush strip seals shall be installed to all timber sash windows.
- u) Inspect all existing window hardware and refurbish where necessary.
- v) Retain for reuse, original hardware and provide for overhauling or repairing fittings if required. Seized mechanisms may require dismantling, full cleaning and reassembly followed by lubrication. Only replace fittings where necessary.
- w) New hardware shall be installed as required to include sash fasteners and window lifts (refer to Architect's hardware schedule).
- x) New sash weights, pulley wheels and new sash cords to be provided where missing/defective.
- y) Windows shall be re-installed to opes (following repair/replacement of window linings) ensuring that windows are correctly hung, re-balanced and in full working order.

10.9.4 Draught Proofing of Sash windows

A discrete draught-proofing system is to be installed to all timber sash windows. Ventrolla Perimeter Sealing System (or similar approved) is to be employed.

10.9.5 Procedure

- a) Following all repairs, rebated grooves to be cut to top and bottom of following areas: (1) outward faces of top and bottom of staff beads, (2) lower sash - bottom surface of bottom rail and outward face of meeting rail, (3) soffit of sash box.
- b) System to comply with BS 6375:1-2009.
- c) Components of system must not be painted over.

10.10 Front Door

The external front door is to be sanded, repaired where necessary, primed, and painted and draughtproofing incorporated. Whilst the door is visually in good repair, faults may become apparent during the sanding process. Localised repairs will be carried out to timberwork as necessary.

10.10.1 Refurbishment Procedure

- a) Door to be repaired in situ however, where necessary, and only on approval of the Design Team, door may be removed to produce a satisfactory join and permanent repair. Where it has been agreed to remove elements for off-site works metal tags having unique reference numbers must be wired onto component parts for identification and accurate re-assembly.
- b) Sand and clean back all joinery to assess and quantify repairs. Avoid stripping by immersion in caustic soda or other similar 'acid bath' treatments.
- c) Where timber decay is found the area shall be carefully repaired/replaced as necessary using traditional repair techniques. A policy of minimal intervention must be adopted at all times - avoid unnecessary trimming of original timber.
- d) Treat any areas affected by wood boring insects or rot with an approved insecticide and preservative treatment.
- e) Where necessary salvaged pitch pine shall be introduced to replace missing or damaged timbers. This shall match the moisture content, grain width and grain direction of the existing timber. Avoid mixing timber species.
- f) Where replacing entire components select timber as near quarter sawn as possible and without hairline cracks or shakes. Avoid sapwood and large knots.
- g) All replacement timber shall faithfully replicate the original detail and design.
- h) Splice in new timber (matching in profile and material) with appropriate glue and nonferrous screws. Spliced repairs should be done to direct moisture towards the outer face of the timber and to ensure moisture does not respond on the repair joint. Splice repairs shall include mechanical fixings (timber pegs/non-ferrous screws) in addition to glue. Mechanical fixings shall be made from the inner face of the element.
- i) Scarf joint new sections of timber on the bottom of the jambs where these have become badly decayed using an appropriate glue and nonferrous screws. Mechanical fixings shall be made from the inner face of the element.
- j) Bottom rails are vulnerable and here repairs must be durable and have sound mechanical fixings. Where the front edge of the area has decayed this can be replaced and the internal element retained. Where decay is extensive complete replacement will be required as directed by the Design Team.
- k) Small areas of decay may be built up with an appropriate two-pack system (e.g. epoxy resin or polyurethane type).

10.10.2 Repair of Door Panels

- a) Door panels shall be released where these have been over-sealed by paint or nailed secure. A razor blade may be used to break seals caused by paint/varnish.
- b) Following release, carefully remove the moulding from around the panel using timber shims (care must be taken not to damage or split the moulding).
- c) Where panels are cracked and are to be retained remove dust and dirt using compressed air and a cloth with solvent. Using a syringe, glue the crack and clamp in position until secure. Re-fix mouldings as per existing.

10.10.3 Installation & Hardware

- a) Inappropriate sealants, if found, shall be removed from the door and gaps between the reveal and timber frame shall be caulked using lime mortar or a compound of burnt sand and boiled linseed oil.
- b) Draught proofing brush strip seals shall be installed to door.
- c) Inspect all existing door hardware and refurbish where necessary.
- d) Retain for reuse original hardware and provide for overhauling or repairing fittings if required. Seized mechanisms may require dismantling, full cleaning and reassembly followed by lubrication. Only replace fittings where necessary.
- e) Redundant historic fittings shall be left in situ unless these interfere with the function of the door.
- f) Modern inappropriate hardware and closers shall be removed as directed by the Design Team with remaining timber repaired/spliced to match existing.
- g) Scarring from the removal of historic hinges/locks etc and relating to the re-hanging of doors shall be retained.
- h) Mineral oil shall be applied to working hinges to lubricate where necessary.
- i) New hardware shall be installed as per the architect's hardware schedule.
- j) Door shall be re-installed to opes (following repair/replacement of door linings) ensuring that doors are correctly hung and in full working order.

10.11 External Entrance Stone Steps

The external steps to the principal doors on the south façade will be refurbished.

- a) Carefully remove all biological growth by hand.
- b) Rake out all joints.
- c) Ensure joints are clean and dry.
- d) Repoint all joints with lime mortar.
- e) Rake and repoint rubble stone joints to side of entrance steps.

10.12 Works to Front Railings and Entrance Gates

Entrance Railings, Gates and Plinth Wall to Tullow Street and College Street to be refurbished.
Nb. Contractor to submit method statements for approval by the Design Team prior to commencement of task.

10.12.1 Site preparation

- a) Secure temporary hoarding to be provided to cordon off work area within the public realm during removal and reinstatement of historic ironwork.

10.12.2 Refurbishment of Ironwork

- a) Remove loose rust and scale to SIS 05 59 00 (ST2/ST3) standard, using a wire brush, carbide scraper or an abrasive cleaning system such as JOS/TORC or similar (a low vortex process which uses a mixture of air, abrasive medium (fine inert mineral grit/glass beads/plastic pellets/walnut shells) and relatively small quantities of water).
- b) Where it has been decided to use an abrasive cleaning system a test area is to be carried out to ensure the correct air pressure and abrasive medium. The final cleaning combination is to be agreed with the Inspecting Authority prior to commencing of cleaning.
- c) The metal sections shall be cleaned in manageable sections so that the first area of preparation is not left too long without being treated with the protective paint primer.
- d) All edges of old coating must be well feathered. Sound old coating shall be abraded to key in the new coat.
- e) Remove all dust, debris etc. from the structure and vicinity of the site.
- f) Oil grease, chemical and salt contamination must be removed.
- g) A specialist with at least 7 years' experience in conservation will undertake this aspect of work.
- h) It is intended that the existing historic railings to be cleaned and painted in situ, however, if they need to be removed for repair, the procedure below will be used.
- i) The primer shall contain Ethyl methyl ketoxime and Silicate extenders in a solution being less than 10% concentration ('Corroless S' or other approved product).
- j) The top-coat shall contain xylene, a mixture of isomers and Naptha ('Corroless RF16' or other approved product).
- k) The colour is to match existing.

11 INTERNAL SPECIFICATIONS

11.1 Removal of Later Additions & Redundant Items

Obsolete additions and redundant items identified for removal (partitions, kitchens, bathrooms, plumbing and wiring services, modern fittings & fixtures etc.) will be carefully removed avoiding damage to the historic fabric. Refer to the Design Team's documentation.

- a) Remove fixings taking care not to damage the surrounding substrate.
- b) Where fixings are bedded in mortar a hack saw blade will be used to remove the mortar and loosen the item. Fixings will be removed with a twisting motion. Excessive levering of the fixing will be avoided.
- c) Where fixings are firmly seated a threaded metal bit will be drilled into the centre of the fixing to provide sufficient grip to enable this to be pulled out.
- d) All debris and dust to be removed from the resulting holes.
- e) All holes left in the masonry are to be repaired using a suitable lime mortar repair product to the Design Team's approval.
- f) All holes left in the timber are to be repaired using a suitable wood filler to colour match the surrounding timber.

11.2 Timber Floors

It is proposed to lift the boards to the upper floors to install fire stopping measures and new services. Floors on ground floor will be opened to insert sub-floor insulation. All work to the timber floors must be carried out by a joiner with conservation experience.

- a) Where skirting boards and floorboards are to be lifted, their make-up will be carefully recorded, and the boards numbered to facilitate re-laying in their original positions.
- b) Areas of damaged or previously removed timbers will be replaced following the principles of minimum intervention and like-for-like repair.
- c) Carefully remove later floor coverings, modern beading, tacks and nails. Floors to be inspected and recorded by the Conservation Consultant once floor coverings removed. Trial removal of coverings to be carried out in the presence of the Conservation Consultant.
- d) Debris will be carefully removed taking care not to damage the key to the plaster ceiling below.

11.2.1 Lifting, Re-laying & Repair of Timber Flooring.

The removal and repair of floorboards will be carried out in a phased programme as directed by the Structural Engineer.

11.2.2 Lifting and Storage

- a) Record existing arrangement of boards prior to lifting to ensure faithful reinstatement. Floorboards will be numbered in sequence to ensure that these are re-laid in the existing arrangement.
- b) Number boards prior to recording and lifting. Numbering will be recorded. Numbering will be durable for storage period and then easily removed without damage once boards are reinstated.
- c) Where boards are missing commence lifting in this location. Where floors are complete commence lifting with a relatively short board having at least one end in good condition and not located adjacent a wall.
- d) Using a block of wood to protect the edge of the adjoining board work around the board with a bolster chisel, levering from side to side.
- e) Next, lever more vigorously approximately midway along the board moving from one side of the board to the other and then from one end to the middle to the other until the board works free. If the board is extremely decayed or particularly well seated, it may be necessary to use a nail punch to drive the existing nails deeper until the board is released.
- f) Once one end is free, place a batten beneath the board resting on the adjacent boards. Work this batten gently toward the next set of nails. When the nails have risen proud, remove the batten and allow the board to drop to its original position. Remove the nails with a claw hammer.
- g) Care must be taken when removing nails at the end of the board as splitting may occur.
- h) A pinchbar will be used to remove the subsequent boards, utilising a block of wood when levering the crowbar against the exposed joists. Where the boards are very fragile it may be necessary to cut the nails with a hacksaw.
- i) Floorboards will be stored in an adjacent room (of similar temperature) to avoid warping.

11.2.3 Repair & Replacement Boards

- a) Where decay is visible the area will be carefully repaired/replaced as necessary using traditional repair techniques. A policy of minimal intervention must always be adopted.
- b) Salvaged timber to match existing and from a reputable source will be used to replace missing or damaged areas.
- c) All replacement timber will faithfully replicate the original detail and design. A joiner with conservation expertise will carry out this element of the work.
- d) Relay floorboards using non-ferrous wood screws, though existing fixing holes wherever possible, countersunk and plugged with matching timber.

11.3 Subfloor Insulation on Ground Floor

Subfloor insulation is required below suspended timber floors and solid floors at ground-floor level.

11.3.1 Installation below suspended floors

- a) Floor coverings to be removed.
- b) Where necessary, historic skirting boards to be recorded and removed to lift floorboards. Skirting to be stored on site in own room.
- c) Floorboards to be removed as per above methodology for later reinstatement.
- d) The subfloor areas (solum) will need to be cleared of all debris.
- e) 50mm x 20mm battens to be installed to each side of each joist.
- f) Batts of wood fibre insulation to be installed between each joist, supported by the battens.
- g) Air gap of 100 between top of insulation and bottom of floorboard to be provided.
- h) Front wall vents must be cleared and remain open.

11.4 Walls, Internal

11.4.1 Removal of Modern Wall Plaster

Areas of modern cement-based plaster will be carefully removed in locations on the second floor and at the upper level of the primary staircase.

11.4.2 Tools

The removal of plaster will be carried out using small manual hand tools (bolster chisels/lump hammer). However, where the plaster is particularly hard it may be necessary to use a small chasing machine to aid with its removal.

11.4.3 Procedure

- a) Working in manageable sections the contractor will make a number of starter holes in various locations to determine the depth of plaster.
- b) Where possible the plaster will be removed using a flat-headed bolster chisel and lump hammer. Great care must be taken not to forcibly remove larger pieces as this could lead to damage to the underlying masonry.
- c) Where the plaster bond proves difficult to remove using manual hand tools the use of specific power tools may be considered to include wall chasers with adjustable blade depths. Setting the depth to $\frac{3}{4}$ of the plaster depth, chase grid lines in the plaster until the area has become sufficiently weakened. Following chasing remove the remaining plaster using bolster chisel and a lump hammer.
- d) Vertical and skyward junctions with sound historic plaster will be left with slightly undercut edges. A square edge will be left on the bottom.
- e) Plaster will be cut out to rectangular profiles to avoid ragged repairs, working between features of the building where possible.
- f) All loose particles must be brushed away from the masonry using a stiff brush - power washing of the walls will not be permitted as a means of preparing the substrate for re-plastering.

- g) Upon removal, consolidation of the underlying masonry will be carried out as required consisting of raking out and re-pointing, and the re-bedding of masonry where loose or missing.
- h) The exposed walls will be allowed to dry out prior to applying a lime-based plaster, if needed.

11.4.4 Safety

- a) Operators will wear protective clothing to prevent dust from coming in contact with the skin or eyes or from being inhaled.
- b) Area will remain well ventilated throughout.
- c) Eye wash facilities and emergency shower must be available when handling this product.

11.4.5 Preparation of Wall Substrate

Following removal of the wall plaster consolidation and preparation of the substrate will be carried out to include the brushing down of the walls, the repair of voids, and localised raking-and-re-pointing of areas where necessary.

Preparation of the wall substrate will be carried out in all areas where plaster has been removed.

In cases where re-plastering is to be carried out, and where feasible, the walling will be left exposed for the longest possible time before re-plastering. This is to allow the years of built-up moisture within the body of the wall to dry out sufficiently.

The aim in the preparation of the background will be to achieve a surface that can take a reasonably consistent thickness for the thrown coat, and to provide an adequate key for this first coat of flat plaster work.

11.4.6 Preparation of Wall Areas

- a) The walls will be thoroughly brushed down several times using a stiff masonry brush to remove friable residue and to provide a key for the new plaster. The contractor will satisfy himself that the walls are suitably brushed down to receive the new plaster coating.
- b) The use of power washers in the preparation of the wall substrate will be not be permitted.

11.4.7 Re-plastering of Wall Areas

Areas of missing or removed wall plaster will be repaired with lime plaster.

Prior to commencing, trial sample panels will be satisfactorily plastered in the presence of the Inspecting Authority. All specified areas will be plastered to the same standard as the agreed trial panels. Plastering of the remaining areas will only proceed following approval by the Design Team.

Nb. A plaster specialist with at least 7 years' conservation experience must be engaged by the contractor to carry out the following works.

11.4.8 Protection of Surfaces

Areas not called up for thrown plaster will be protected prior to the onset of the works paying particular attention to floors, fireplaces and joinery.

11.4.9 Mixing of Lime Plaster

- a) A conventional cement mixer may be used to prepare the mix.
- b) Accurate measuring of material will always be ensured.
- c) Start with an empty mixer.
- d) Mix the lime and water until the desired consistency has been reached.
- e) The mix must be used within two hours and then left to set.

11.4.10 Materials and Mixes for Dubbing Out, Thrown Coat & Flat Plaster

- a) The mix for the dubbing out mortar is to be NHL 3.5 at rate of 1:2.5, with well graded aggregate of less than 10mm with the addition of animal hair.
- b) The mix for the first coat, which is also the thrown coat, should NHL 3.5 at a rate of 1:2.5, with aggregate of less than 10mm with the addition of animal hair.
- c) The mix for the second thrown coat will be NHL 2 at a rate of 1:3, with well graded aggregate of less than 10mm with the addition of animal hair.
- d) The mix for the evening out coat for flat plastering will be NHL 2 at a rate of 1:2.5 with a well graded aggregate of particles less than 10mm with the addition of animal hair.
- e) The topcoat will be gauged lime putty to agreed samples.

Note: Thickness of application will vary according to the depth of the original plaster. Thickness noted in the application are guidelines and should be adjusted to meld the repair to the original level.

11.4.11 Dubbing Out to Rubble Walls

- a) Dampen but do not wet background (in some cases it may not be necessary to dampen the walls).
- b) Apply mortar with trowel or float and press home to even out surface.
- c) The dubbing coat will not be straightened.
- d) Key the surface, taking care not to score too deeply.
- e) Thereafter if necessary, control the rate of drying out by misting the surface with clean water or lime water, until all shrinkage has stopped and the mortar has hardened sufficiently to receive the thrown coat.
- f) Do not over-wet the surface (if water droplets appear on the surface it is over-wet).
- g) This coat will be given sufficient time to cure (about 1 week, depending on curing conditions).

11.4.12 Application of Thrown Coat

- a) The aim of this application is to cover all walls with a layer of plaster.
- b) The maximum thickness should be 10-15mm with overall thickness of both thrown coats at 16mm.
- c) Ensure that surrounding surfaces are well protected prior to proceeding.
- d) Dampen the surface prior to application of the plaster mix.

- e) The coat is to be applied by throwing the plaster from a trowel onto the wall surface. This will remove air bubbles from the mix and ensure the best bond between the plaster and the wall.
- f) This coat should be allowed to dry for 3-5 days.
- g) This coat should be followed with the second thrown coat consisting of a weaker mix.
- h) In the case where the application of flat plaster is to follow, the thrown coat should be keyed and allowed to harden sufficiently to receive the next coat (approx. 3-5 days).

11.4.13 Second or Floating Coat to Flat Plaster

- a) This straightening coat should not be applied until the first coat is sufficiently hard.
- b) Apply with a laying-on trowel to a dampened background.
- c) At this stage, if straightening is necessary, fill out irregularities in thin layers and apply the floating coat to the desired line using rules or dabs.
- d) The maximum thickness should be 14mm in one pass.
- e) Tighten in as before with a cross grained wood float and key lightly to receive the finish.
- f) Any irregularities in the background must be made good at this stage as it will not be possible to straighten the finishing coat due to its thinness.
- g) Allow the second coat to harden sufficiently to receive the top/finish coat (approx. 3-5 days).

11.4.14 Finishing Coat

- a) Dampen the second coat in preparation for receiving the top/finishing coat.
- b) Cracks should be closed up by scouring the surface with a wooden float using a circular movement and pushing hard to consolidate the coat. This will enforce the bond between the coats and remove the high spots, creating a flatter surface.
- c) A fine spray of water should be applied in preparation for receiving the top/finishing coat.
- d) Apply the 2mm topcoat (lime putty). Work the topcoat up to finish level and polish the surface using a plasterer's steel trowel.

11.4.15 Protection & Aftercare of Lime

- a) The area/s must be covered with hessian and allowed to dry out slowly over a period of three weeks.
- b) The drying temperature will be controlled and drying must not be forced by introducing excessive heating.
- c) In hot weather it will be necessary to regularly re-wet the sacking.
- d) Lime products must not be used in temperatures of 5 degrees or falling.

11.4.16 Storage of Lime & Aggregate

- a) Lime products are usually supplied in water-resistant paper bags. If the bags are allowed to get wet they may be irreversibly damaged.
- b) Once opened the exposure to air will start to weaken the hydraulic set. As a result any opened bags left at the end of the day will be carefully folded over at the top and put

into a dry store. In this state the lime will remain useable for a further 2 or 3 days. Thereafter it will be discarded.

- c) All materials (lime/sand/aggregates) are to be stored in a clean, dry environment where there is no risk of contamination or damage.

11.4.17 Safety

- a) The manufacturer's materials safety data sheets are to be obtained and a copy of these is to be sent to the Design Team.
- b) The instructions in the materials safety data sheet are to be adhered to in all cases.
- c) Operators will wear protective clothing to prevent product/material from coming in contact with the skin or eyes or from being inhaled.
- d) Products/materials are to be used in well ventilated areas only.
- e) Do not artificially heat any of these products/materials.
- f) Procedures for disposal of containers will comply with all relevant government, local authority and any other relevant regulations.
- g) Eye wash facilities and emergency shower must be available when handling this product/material.

11.4.18 Application of Paint/Decorative Scheme

Plaster areas will be painted in breathable paint medium suitable for use on lime plaster - to be approved by the inspecting authority (refer to architects finishes schedule).

It is recommended that fresh plaster be allowed to dry for a period of 6 months prior to the application of a paint medium (application prior to this timescale can risk failure of the paint medium in the long term).

Once the plaster has been prepared and allowed sufficient time to dry thoroughly then the paint can be applied in light coats. Varying absorbency rates, striking-through or colouring substances on the surface must be blocked with an appropriate primer before application. This will be agreed with the Inspecting Authority.

Breathable paint medium suitable for use on lime plaster - to be approved by the inspecting authority.

Breathable paint such as glue bound distemper clay paint: made by Earthborn, Beek or Keim paint are recommended as is casein distemper by Farrow & Ball.

11.5 Sash Windows

Windows to be refurbished and repaired to working condition with draughtproofing incorporating. Refer to section on Windows in the External Conservation Specification above.

11.5.1 Refurbishment of Historic Internal Window Joinery, Linings and Shutters

The existing historic window joinery will be refurbished to include the internal shutter boxes, architrave, apron panels, soffit panels, shutters and sill boards. Window linings and shutters to be sanded, repaired, primed, and painted, where necessary. Shutters to be repaired to working condition.

A specialist heritage contractor/window joiner with at least 7 years conservation expertise will be employed to carry out this element of the work.

11.5.2 Timber Repair

- a) Window joinery will be repaired in situ however where necessary, and only on approval of the Design Team, items may be removed to a workshop to produce a satisfactory join and permanent repair.
- b) The contractor will ensure that all disassembled window joinery items and elements will have metal tags having unique reference numbers wired onto component parts for identification and accurate re-assembly.
- c) Modern inappropriate hardware, fittings & fixings will be removed as directed by the Design Team with remaining timber repaired/spliced to match existing.
- d) Sand and clean back all joinery to assess and quantify repairs. Avoid stripping by immersion in caustic soda or other similar 'acid bath' treatments.
- e) Carefully free over-painted window shutters and replace hardware as necessary (hinges, knobs, catches) to ensure shutters open and close freely.
- f) Where timber decay is found the area will be carefully repaired/replaced as necessary using traditional repair techniques. A policy of minimal intervention must be adopted at all times - avoid unnecessary trimming of original timber.
- g) Where necessary salvaged pitch pine will be introduced to replace missing or damaged timbers. This will match the moisture content, grain width and grain direction of the existing timber. Avoid mixing timber species.
- h) Where replacing entire components select timber as near quarter-sawn as possible and without hairline cracks or shakes. Avoid sapwood and large knots.
- i) All replacement timber will faithfully replicate the original detail and design.
- j) Splice in new timber (matching in profile and material) with appropriate glue and nonferrous screws. Splice repairs will include mechanical fixings (timber pegs/non-ferrous screws) in addition to glue. Mechanical fixings will be made from the inner face of the window.
- k) Small areas of decay may be built up with an appropriate two-pack systems (e.g. epoxy resin or polyurethane type).
- l) Shutters will be re-installed to open (following repair/replacement) ensuring that these are correctly hung, re-hinged and in full working order.

11.6 Granite Tracery and Leaded Light Windows

Method statement for repair to be provided by specialist contractor with at least 7 years' experience.

11.7 Doors, Internal - Refurbishment of Historic Doors

11.7.1 Protection of Internal Doors

All internal historic door leaves and timber architraves will be protected for the course of the works by the provision of one or a combination of the following: sheet hoarding, industrial bubble wrap, corrugated cardboard, edge board card protectors (similar used to protect corners on pallets) and u-shaped foam edge protectors.

11.7.2 Refurbishment of Internal Doors

Where historic doors and architraves are to be retained, they will be refurbished.

A specialist heritage joiner with at least 7 years conservation expertise will be employed to carry out this element of the work.

11.8 Timber Joinery

Timber joinery will be retained in situ. Where elements must unavoidably be temporarily moved to facilitate the works these will be recorded in situ, carefully removed, safely stored in stable environmental conditions similar to the room from which they have come to avoid warping, and then reinstated in their original positions.

11.8.1 Refurbishment of Historic Timber Skirting

The historic timber skirting boards will be repaired/replaced to match existing.

- a) Where decay is visible the area will be carefully repaired/replaced using traditional repair techniques. A policy of minimal intervention must be adopted at all times.
- b) Open joints will be caulked with proprietary wood filler and finished to match surrounding timber.
- c) All replacement timber will faithfully replicate the original detail and design.
- d) Splice in new timber (matching in profile and material) with appropriate glue and nonferrous screws.

11.8.2 Painting of Timber Joinery

All previously painted refurbished window joinery, doors and skirting will be painted.

Refer to architect's specification for paint product and details.

- a) Wash down the previous paintwork with sugar soap, soda or detergent, and rinse off.
- b) Oil, grease, chemical, and salt contamination must be removed.
- c) Sand down all surfaces to a sound base, removing flaking paint with pumice stone, pumice block or sandpaper. Brush away all dirt and grit. It is not necessary to remove sound old paint providing that the substrate is good, this does not inhibit the opening and closing of the window/door and as long as this is compatible with the proposed paint medium.
- d) Use a shaped shavehook to strip mouldings.
- e) Never use a blowlamp or propane torch to remove paintwork.
- f) Remove all dust, debris etc. from the structure and vicinity of the site.
- g) Spot prime any areas of exposed bare wood.
- h) Apply by brush.
- i) Power mix product thoroughly before use.
- j) Use immediately after mixing.
- k) After first application of product, leave for a minimum of eight hours before proceeding.
- l) Apply second application, leaving for a minimum of eight hours and a maximum of 48 hours before proceeding.
- m) Apply finish coat (colour to be agreed with Design Team).
- n) The manufacturer's specified film thickness for each coat is to be achieved in all cases. Work is to proceed in a sequence that ensures finished work is not spoiled by dust and debris arising from any other work. All work is to be carried out to an approved standard.
- o) When finished, all exposed wood will be covered (make sure not to seal panels fixed as this will cause splitting and cracking of the timber).

11.9 Staircase

11.9.1 Protection of Staircase

The staircase will be protected from foot traffic for the duration of the works by provision of a layer of dry hessian, soft board and 13mm plywood sheeting with sufficient projection to avoid damage to the nosing. Handrails and balusters will be encased ensuring no fixings attach to or place pressure on the historic fabric.

11.9.2 Repair & Refurbishment

Where damage or decay is visible the area will be carefully repaired/replaced as necessary using traditional repair techniques. A policy of minimal intervention must be adopted at all times. All replacement timber will faithfully replicate the original detail and design. A joiner with conservation expertise will carry out this element of the work.

11.9.3 Finishing

Do not sand or abrasively clean old boards. Scrubbing of the boards with water will be carried out. Care must be taken not to saturate the timber or place excessive pressure on the timber when scrubbing.

11.10 Fireplaces

11.10.1 Protection of Historic Fireplaces

All historic fireplaces will be boxed out in plywood for the duration of the works - ventilation will be provided to ensure adequate air movement. Fixings will be to the surrounding wall plaster and not to the fireplace surrounds.

Fireplaces that are no longer in use and are to be blocked will have appropriate provision for the maintenance of ventilation to the flue. An appropriate wire cowl or ventilated cap will be installed to the flue head. Refer to Design Team's documentation.

Operators will wear protective clothing to prevent product from coming in contact with the skin or eyes or from being inhaled. Atomising sprays are not to be used.

11.10.2 Cleaning of Chimney Flues

The chimney flues will be carefully cleaned and detritus removed. Clean flues using sweep brushes removing loose material and deposits. No obstructions are to remain within the flues.

11.11 Cleaning of Windows

Upon completion of all works and following striking of the scaffold all windows will be cleaned.

Potential Impacts on Architectural Heritage in Relation to the Following Areas and Structures		Impact
Presentation Convent	Conservation works and the reinstatement of the original floor plan will have a positive impact on the fabric, energy performance and character of the former Presentation Convent. The architects' proposal will declutter the floor plan and will improve flow and circulation at the heart of the building.	Positive
Modern Library Extension	The proposal will call for the total demolition of the modern library extension, which is a functional but architecturally insignificant structure.	Neutral
Museum Building	<p>The southern part of the museum's eastern elevation, which is abutted by the current extension, will be physically impacted by the demolition of the existing extension. Mitigation: The demolition procedures must be carefully designed so to prevent an adverse impact on the fabric of the museum building.</p> <p>The northern part of the museum's eastern elevation will be partially abutted by the proposed extension. By marrying the old with the new in a carefully considered way, the museum's elevation will become a significant architectural feature of the new extension. Mitigation: To mitigate damage to or loss of any historic fabric, the new extension has been designed to ensure it connects with this elevation in a positive way.</p>	<p>Neutral with mitigation</p> <p>Positive with mitigation</p>
Rear Site	The new extension will build over much of the rear site. Extending northwards, the design will call for the removal of a small lawn and much of the car park.	Neutral
Presentation Place	The removal of the existing library extension will have a neutral impact on the character of Presentation Place. The proposed extension will transform the western side of the pedestrian street. To respect the privacy of the occupants of the terrace on the eastern side of the street, the proposed elevation will not have windows on its first floor.	Neutral
Adjacent Protected Structures	Protected structures visually connected to the development site include the Presentation Convent, Museum Building and Carlow Cathedral. Having regard for the significance of these landmark buildings, the scale of the proposed extension will remain visually subordinate to these protected structures.	Neutral
Streetscapes	The sensitive repair of the exterior elevations of the historic convent building will benefit the character of the streetscape.	Positive
Architectural Conservation Area	The repair of the exterior elevations of the historic convent building will benefit the character of the ACA in which it is located.	Positive

	The additional extensions will be concealed to the rear of the Museum and Convent building and therefore will not impact on the established character of the ACA.	Neutral
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Assessment of Impacts on the Protected Structure	
Proposed Works: Conservation Works to Presentation Convent	Rationale, Impact & Mitigation
<p>Roof: Roof will be re-slatted, rainwater goods to be refurbished and replaced where necessary. New insulation to be provided to floor of roof space. Localised repointing to chimneystacks will be carried out.</p>	<p>Rationale: The roof of the protected structure is to be re-slatted to allow for the installation of a breathable membrane which is necessary to protect the health of the historic roof timbers. Original rainwater goods will be refurbished. To restore character to the roofscape, existing replacement rainwater goods will be replaced with new cast-iron units to match the profiles of the original.</p> <p>Impact: The roof will be stripped and re-slatted. Existing sound slates will be used with similar sourced to match as necessary. The installation of new rainwater goods to match the profiles of original gutters and downpipes will have a beneficial impact on the character of the exterior facades.</p> <p>Mitigation: Slates must be installed on battens that are spaced to the present batten gauge, ensuring that present coursing arrangement is copied. Batten gauge must be confirmed by the contractor prior to removal of battens. Sample slates must be presented to conservation consultant for approval.</p>
<p>Elevations: The existing cementitious render will be removed from the external elevations and new lime render will be installed. Decorative details such as window surrounds, string-courses and the eaves corbels will be retained and made good, as necessary.</p>	<p>Rationale: The cementitious render is dense and not breathable which means that any water that penetrates will struggle to evaporate. The render is cracked and boast in areas and previous repairs have left a series of patches throughout. The re-rendering with appropriate lime render will benefit the elevations visually and physically.</p> <p>Impact: Render must be carefully removed to ensure there is no damage to the underlying substrate. The extant dressings must retained and worked around so they are not impacted during the render removal process.</p> <p>The new Otterbein (NHL3.5) Lime and Wexford sand render will be a light tan colour which will bring warmth to the external elevations. The smooth outer coat will be skilfully scored to produce a ruled-and-lined finish as per existing and the previously painted surrounds to openings will be repaired as necessary, prepared and re-painted.</p>

<p>Windows and Doors: Windows and the main door will be refurbished. Windows will be draught-proofed.</p>	<p>Rationale: Sash windows, leaded light windows and the main door will be refurbished to enhance the exterior, prevent heat loss and improve the longevity of historic fabric.</p> <p>Impact: Works to refurbish historic fabric will have a beneficial impact on the building’s historic character.</p> <p>Mitigation: Work must be carried out carefully to ensure that any defects are repaired on a like for like basis.</p>
<p>External Structural Cracks: Structural cracking will be repaired as per the engineer’s specifications.</p>	<p>Rationale: During render removal, structural cracks may be identified for remediation. Cracks will be repaired as per the structural engineer’s specifications.</p> <p>Impact: Works may involve the use of Helical bars to stitch cracks. Repair works will be carried out on a minimum intervention basis.</p>
<p>Refurbishment of Railings: The historic railings and plinth wall to the front site will be refurbished.</p>	<p>Rationale: The front site railings will be refurbished to protect ironwork from future decay and to enhance the visual character of the front of the building.</p> <p>Impact: The like-for-like conservation works will halt deterioration and will visually enhance the front site and streetscape.</p>
<p>Remediation of Coal Chute: External pavement will be lifted to allow for weather proofing of coal chute from above.</p>	<p>Rationale: The coal chute must be weather-proofed from above to prevent water ingressing into the basement.</p> <p>Impact: The external work area within the public domain will need to be cordoned off. The public pavement will need to be lifted and any underlying substrate excavated. Once the top side of the coal chute has been exposed, the conservation consultant and structural engineer will design appropriate remediation to weather the structural feature. Following repairs, the public pavement will be made good as per existing.</p> <p>Mitigation: No historic fabric will be removed from the coal chute. Works will be designed to be reversible.</p>
<p>Internal Plasterwork: Cracked or boast internal plasterwork on the upper floors will be renewed.</p>	<p>Rationale: The plasterwork on the second floor has cracked in a series of locations. Plasterwork in these areas will be removed and any remediation specified by the structural engineer will be carried out, as necessary. Following possible masonry stitching, new breathable lime plaster will be installed.</p> <p>Impact: The present plasterwork on the second floor is replacement and as such, its removal will have neutral impact on the character of the building. The provision of new breathable lime plaster will benefit the internal spaces both visually and physically. A breathable paint will be applied.</p>

Proposed Works: Demolition with Presentation Convent	Rationale, Impact & Mitigation
<p>Ground floor changes: The architect’s drawings indicate that new openings will be installed between the entrance hall and room to the east; the lift and secondary staircase will be removed; non-original doors will be removed; a non-original storeroom to the north of the children’s library will be removed; and openings between the protected structure and new extension will be enlarged or created.</p>	<p>Rationale: The proposed ground floor changes primarily focus on the removal of non-original interventions, although some limited demolition of historic fabric will be necessary. The proposed changes will clarify the layout of the protected structure’s ground floor and will provide for a suitable interconnection between the historic building and new extension. The changes have been carefully designed to ensure that people can move easily around the historic building and new library.</p> <p>Impact: Non-original elements including the lift, secondary staircase and doors will be removed. The insertion of new openings between the entrance hall and library room to east will require the demolition of some historic masonry, as per engineers guidance.</p>
<p>First floor changes: The architect’s drawings indicate that non-original features will be removed including the lift, secondary staircase, WCs, lobby doors.</p>	<p>Rationale: The proposed demolition of non-original features is necessary to improve circulation around the building.</p> <p>Impact: The removal of non-original elements will require careful demolition of building features and fabric. The proposal will have a neutral impact on the fabric and character of the building.</p> <p>Mitigation: Any demolition works must be guided by the team’s structural engineer.</p>
<p>Second floor changes: The architect’s drawings indicate that the lift will be removed; the opening at the top landing of the historic staircase will be widened; the walls between the archive rooms to front the hallway to rear will be removed; and the secondary staircase will be removed.</p>	<p>Rationale: The proposed demolition of features is necessary to improve circulation around the building.</p> <p>Impact: The proposal will require the demolition of original and non-original building fabric. The intended design will improve the layout of the second-floor level.</p> <p>Mitigation: Any demolition works must be guided by the team’s structural engineer.</p>
<p>Impact of Construction Works on the Protected Structures: Historic features must be protected during construction works.</p>	<p>Impact: During demolition and construction, vulnerable historical fabric could be potentially damaged by impact.</p> <p>Mitigation: All features including the historic timber staircase, floor tiles, stone fireplaces, historic doors and architraves, and historic windows and associated joinery must be adequately protected from impact. Early features must be encased or protected by plywood as necessary.</p>



Fig.62: Images of staircase protected by means of plywood sheeting during works.

Proposed Works: Demolition of Existing Library	Rationale, Impact & Mitigation
<p>Demolition of Present Library Extension: The modern library will be demolished.</p>	<p>Rationale: The modern library extension must be demolished entirely in advance of construction works for the new extension.</p> <p>Impact: The modern library extension abuts the Presentation Convent and Museum buildings. The removal of the modern extension will require strategic demolition to prevent any damage to fabric of the historic elevations.</p> <p>Mitigation: Demolition of fabric that directly connects with the historic buildings must be carefully conducted to prevent damage to early fabric.</p>
<p>New Library Impact on North Elevation of Presentation Convent: The new library extension will be built to the north of the protected structure and will abut both it and the Museum Building.</p>	<p>Rationale: To connect the new with the new, the proposed library extension will abut the rear elevation of the Presentation Convent.</p> <p>Impact on Presentation Convent’s North Elevation: The new library extension will be directly connected to the historic convent building. As part of the design, the north elevation of the convent building will be modified at ground-floor level as follows: the existing automatic doors at the north of the entrance hall will be removed, an opening to the north of the present lift will be widened and a new doorway will be inserted at the east end of the elevation. At first floor level, a new doorway will be installed at the east end. At second floor level,</p>

an existing window at the east end will be converted into a doorway.

Because the said elevation has been greatly modified on previous occasions, with the demolition of an historic extension and the insertion of new openings to access the existing modern extension, the original fabric and character of the elevation have been already altered significantly. The proposed changes will require the localised demolition of early fabric to modify or create new openings to the new extension.

In addition to the changes to openings, the new extension will connect directly to the historic elevation. As shown in a detailed drawing produced by Carr Cotter Naessens, great consideration has been given to how the new should connect to the old. As illustrated below, a new chased line will be created to accommodate flashing below a sill and a series of bolts will be driven into the masonry to secure the abutment in place.

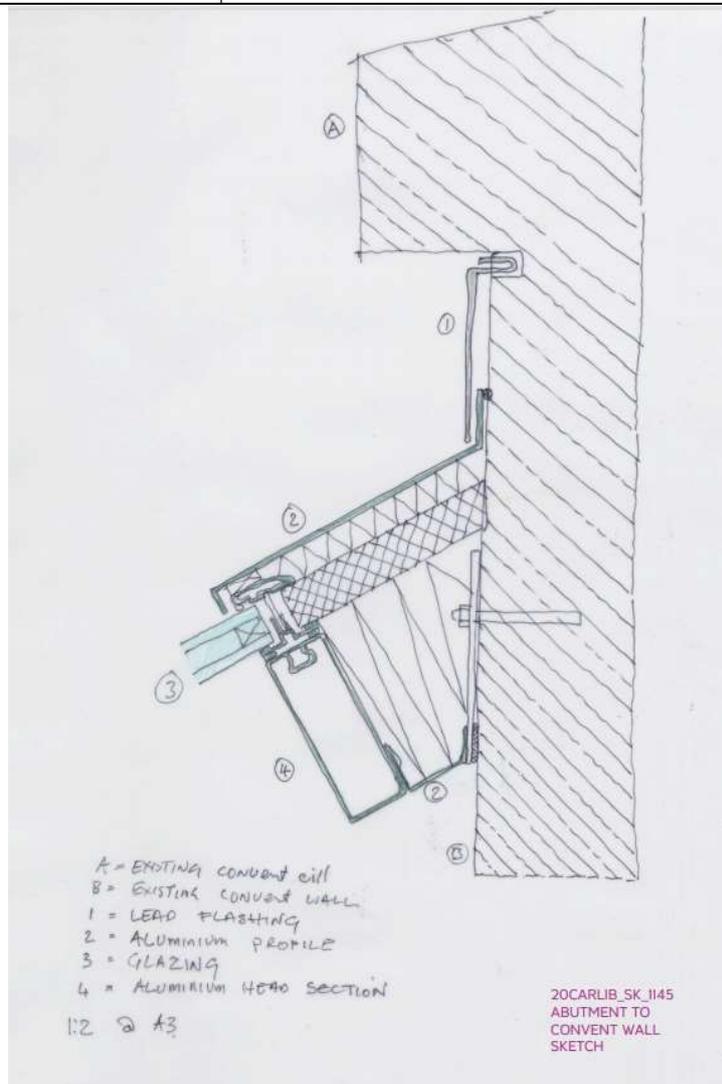


Fig.63: Drawing of Connection of New Extension and North Elevation of Convent by Carr, Cotter, Naessens

New Library Impact on East Elevation of Museum Building: The extension will abut to the eastern elevation of the museum.

Rationale: The architects have designed the new extension to incorporate the historic stone elevation as much as possible. The new extension will abut the elevation at roof level as detailed below so that the characterful masonry can become a prominent architectural feature within the library extension.

Impact on Presentation Convent’s North Elevation: The new library extension will be directly connected to the Museum. As shown in a detailed drawing produced by Carr Cotter Naessens, great consideration has been given to how the new should connect to the old. As illustrated below, a new chased line will be created to accommodate flashing below a sill and a series of bolts with steel angles will be driven into the masonry to secure the abutment in place.

The proposed change will have a limited physical impact on the historic masonry and can be easily reversed at a future date if required.

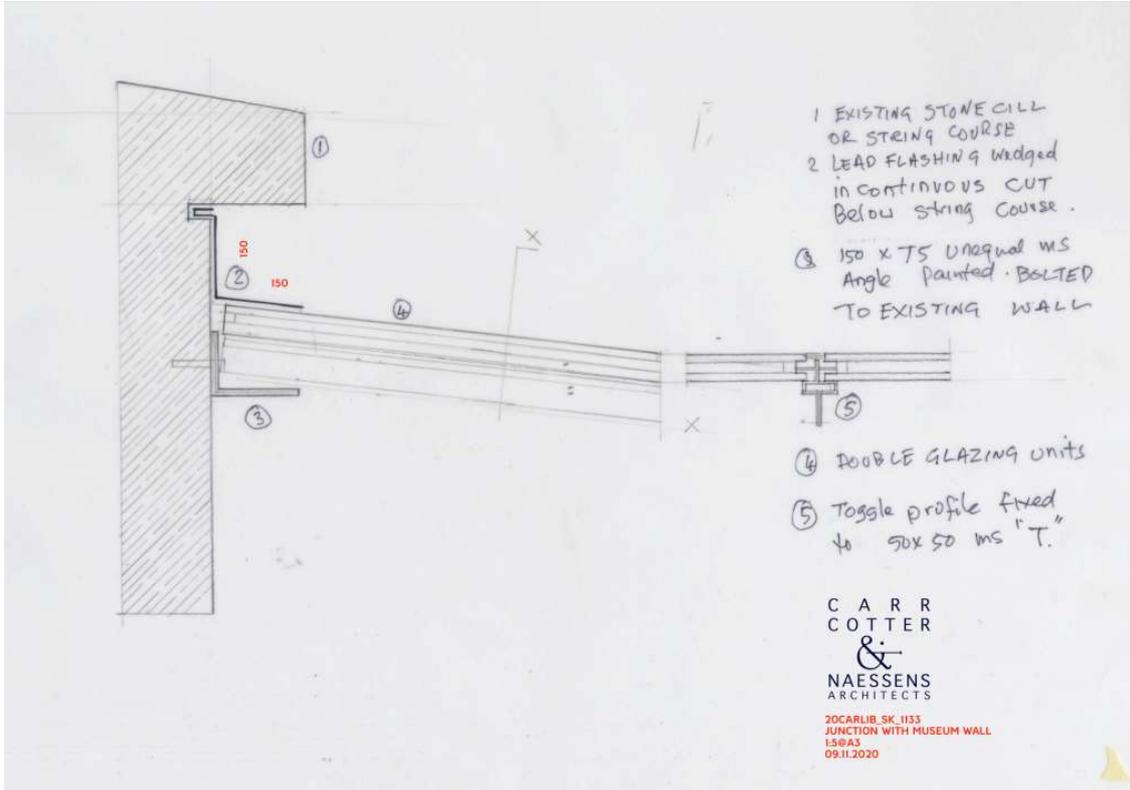


Fig.64: Detail of Connection Between New Extension and Museum wall

APPENDIX 1: INVENTORY PHOTOGRAPHS



Fig.65: South-facing front elevation



Fig.66: Front and east-facing side elevation



Fig.67: North-facing rear elevation with extension



Fig.68: Projecting stairs bay to west



Fig.69: Hipped slate roof over east end of building



Fig.70: Replacement chimneys to centre of building



Fig.71: Detail of ruled-and-lined render



Fig.72: Decorative surround to entrance door

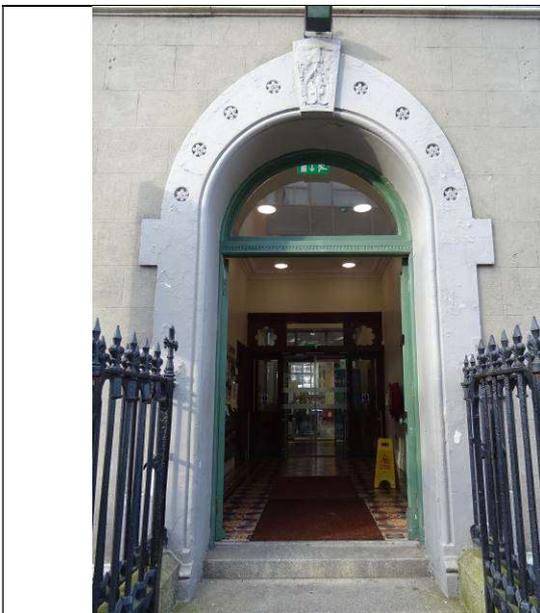


Fig.73: Principal entrance door

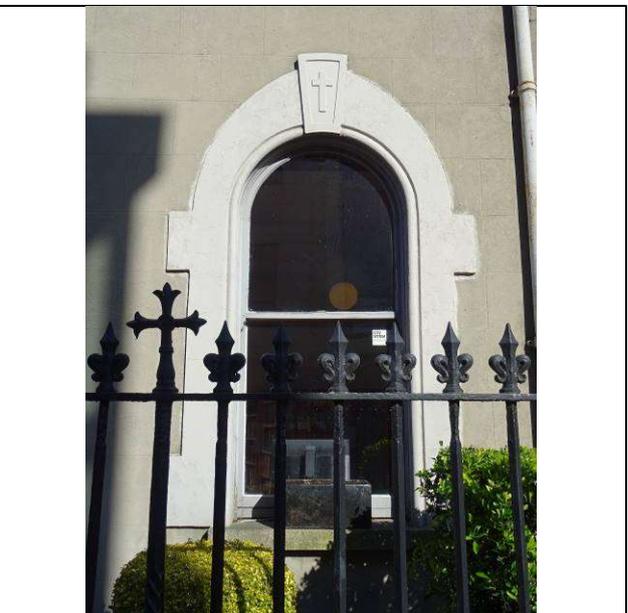


Fig.74: Ground-floor window to front elevation



Fig.75: First floor of entrance bay

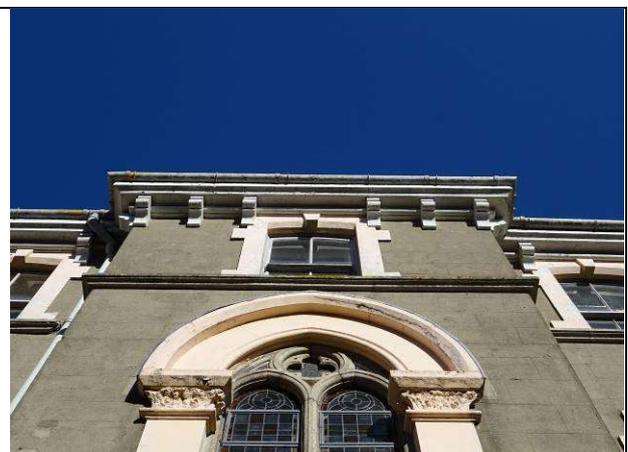


Fig.76: Second floor of entrance bay



Fig.77: Iron grille to basement lightwell



Fig.78: Iron railings and granite plinth to front



Fig.79: Statue of Our Lady and front railings

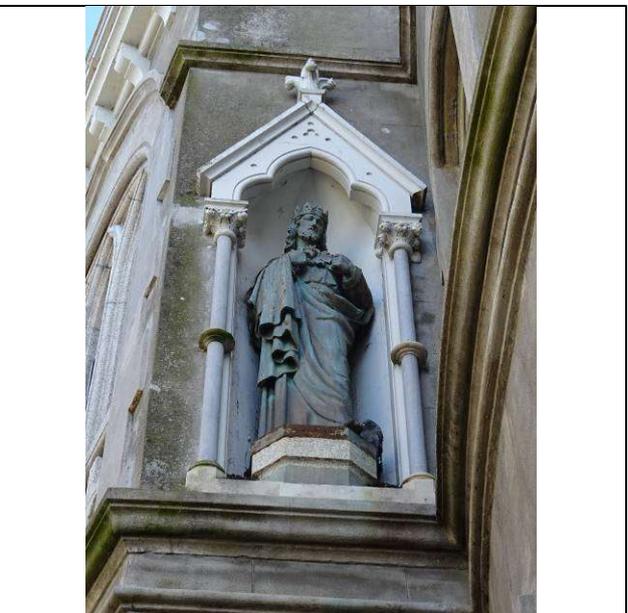


Fig.80: Statue of Christ the King within niche to south side of stairs bay



Fig.81: Ground-floor of stairs bay to west

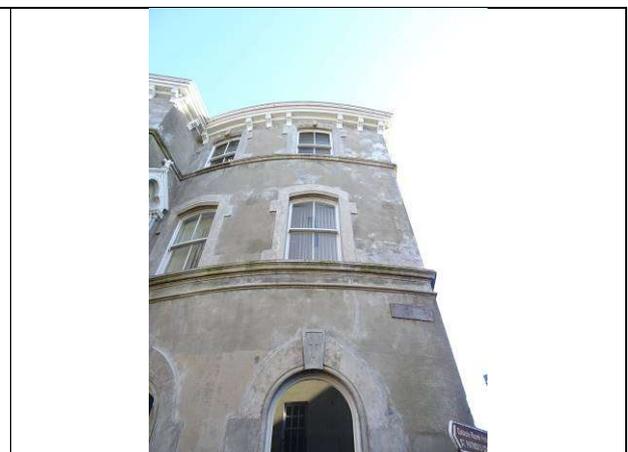


Fig.82: Detail of bow to west

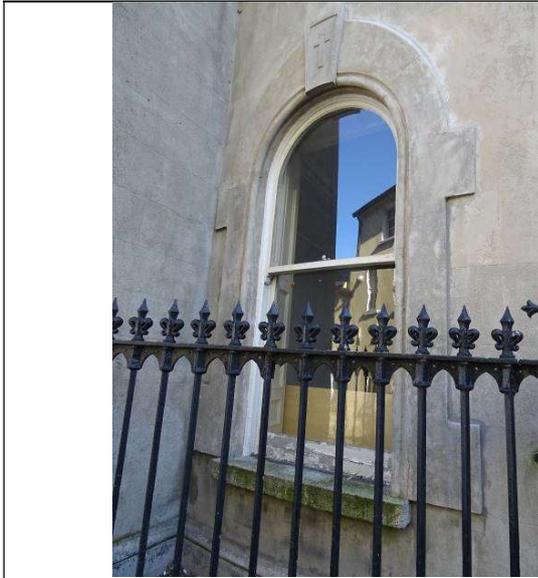


Fig.83: Ground floor window to west bow



Fig.84: Niche and leaded lights windows to west



Fig.85: Second floor of stairs bay to west



Fig.86: First floor of stairs bay to west

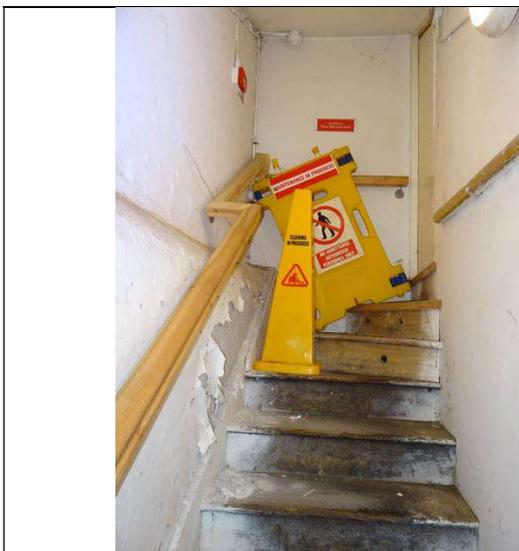


Fig.87: Stairs descending to basement



Fig.88: Stairs descending to basement



Fig.89: Basement, west room, looking south



Fig.90: Basement, west room, looking north



Fig.91: Precast concrete joists and slabs to ceiling



Fig.92: Basement, east room, south window ope



Fig.93: Basement, mid room, looking south



Fig.94: Basement, mid room, vaulted ceiling



Fig.95: Basement, mid room, looking northeast



Fig.96: Basement, west bowed room, looking east



Fig.97: Basement, west bowed room, looking south



Fig.98: Basement, west bowed room, looking NW



Fig.99: Coal hole chute to west bow in basement

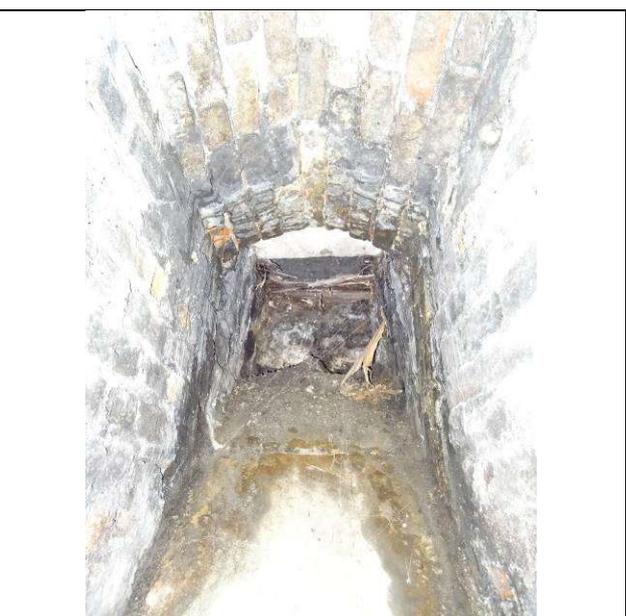


Fig.100: View looking up coal hole chute



Fig.101: Bolection-panelled entrance door



Fig.102: Main entrance hall, looking south



Fig.103: Main entrance hall, looking south



Fig.104: Main entrance hall, door to Shaw Room



Fig.105: Main entrance hall, window to Shaw Room



Fig.106: Main entrance hall, ceiling



Fig.107: Entrance hall, skirting boards and encaustic tiles



Fig.108: Black and red terracotta quarry tiles to stairhall



Fig.109: Shaw Room with bowed wall to west



Fig.110: Acanthus leaf ceiling rose to Shaw Room



Fig.111: Window to west bow



Fig.112: Flat-pannelled shutter to front elevation



Fig.113: Stairhall, looking west



Fig.114: Archway and ceiling to stairhall

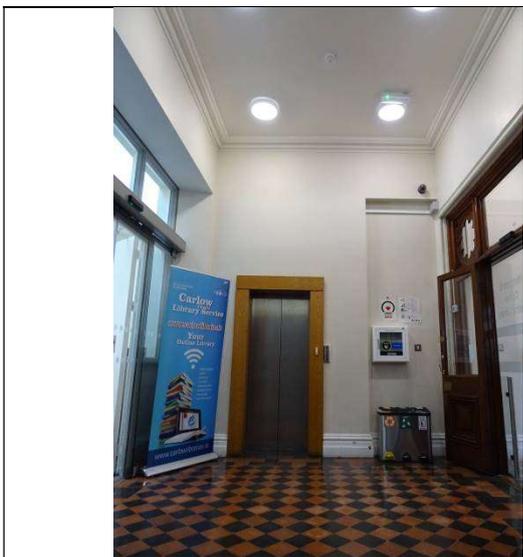


Fig.115: Stairhall, looking east towards lift

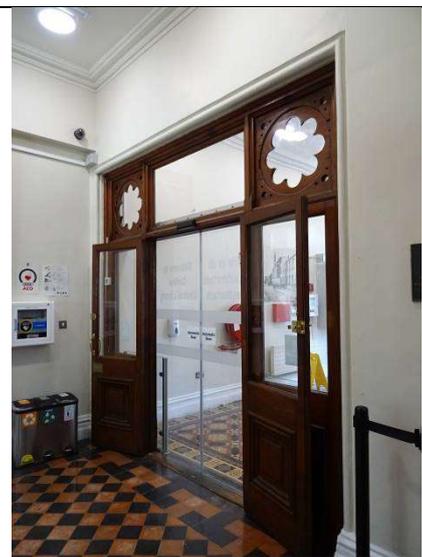


Fig.116: Stairhall, entrance door from hall



Fig.117: View of stairhall from first half-landing



Fig.118: Stucco skirting board and timber wall string at foot of staircase

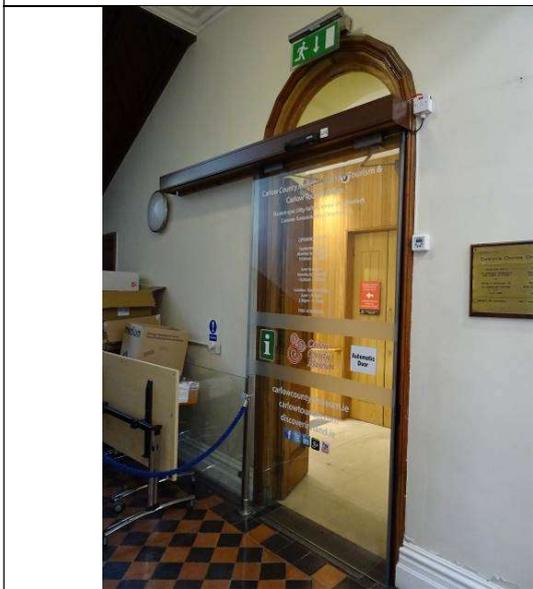


Fig.119: Round-headed doorway to museum hallway



Fig.120: Automatic doors lead from stairhall to library extension

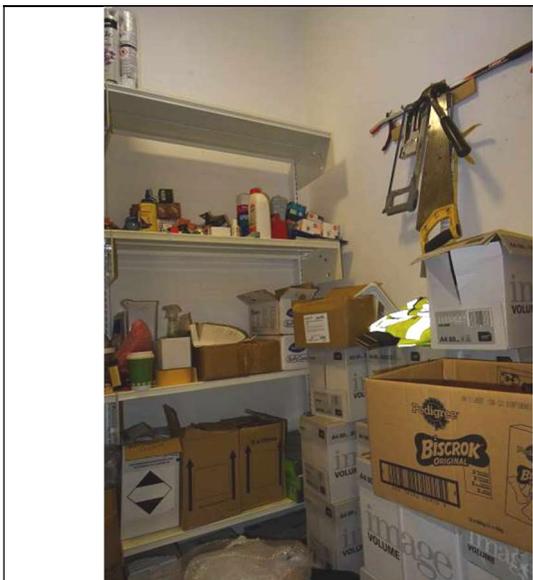


Fig.121: Storeroom to east of lift



Fig.122: Storeroom to east of lift



Fig.123: Children's reading room to west, looking S



Fig.124: Children's reading room to west, looking N



Fig.125: Store to north of children's reading room



Fig.126: Store to north of children's reading room



Fig.127: Original ceiling laths with run-in-situ cornice above suspended ceiling



Fig.128: Part of segmental-headed archway concealed by suspended ceiling



Fig.129: Children's reading room, looking east



Fig.130: Children's reading room, looking west



Fig.131: Carlow limestone fireplace to west end of children's reading room



Fig.132: Red marble boss with dressed star detail to Carlow limestone fireplace



Fig.133: Cast-iron fire grate

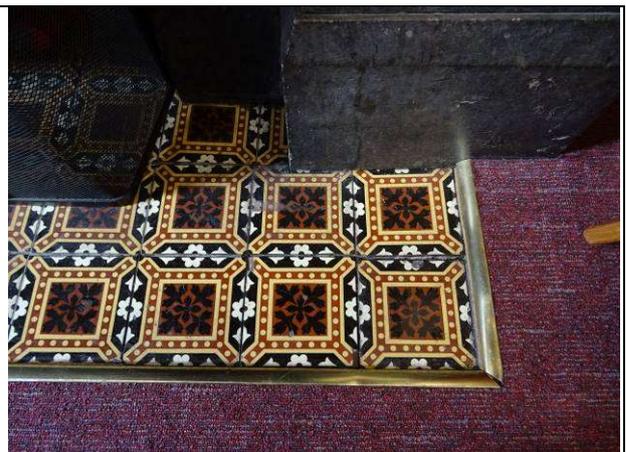


Fig.134: Glazed hearth tiles

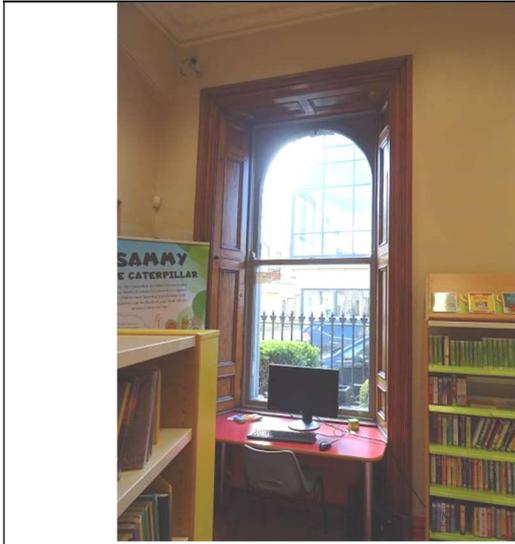


Fig.135: Southern window to children's reading room



Fig.136: Detail of flat-panelled shutter to window on front elevation of children's reading room



Fig.137: Fire door to east elevation



Fig.138: Door to northeast corner of children's reading room



Fig.139: Room between children's reading room and library extension



Fig.140: Ceiling to room between children's reading room and library extension



Fig.141: Windows to west room behind stairs



Fig.142: Floor tiles to west room behind stairs

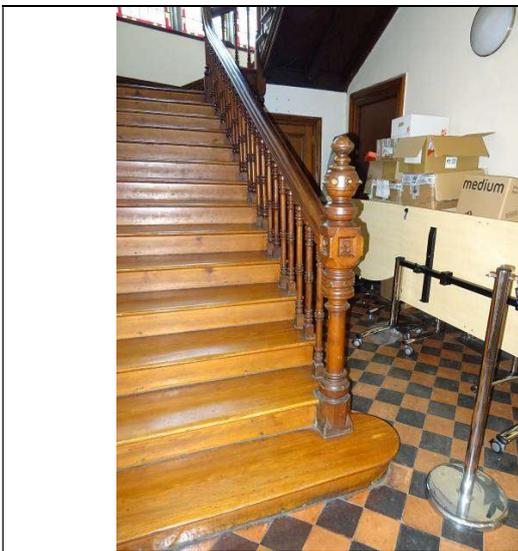


Fig.143: Turned newel post to curtail step of stairs

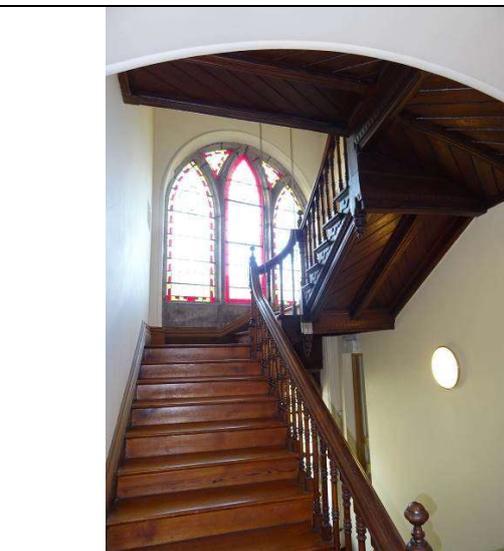


Fig.144: Flight rising to first half-landing

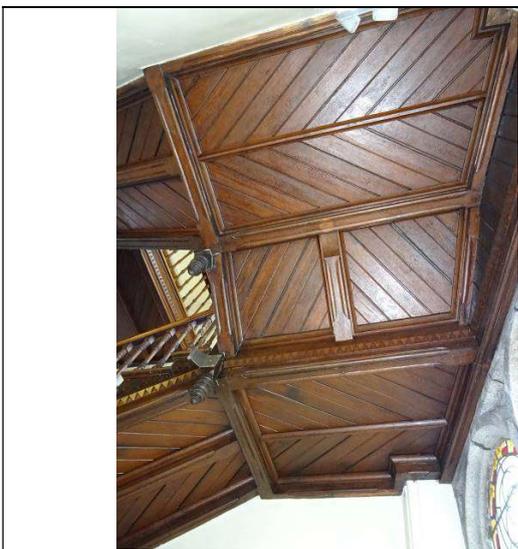


Fig.145: Soffit of first half-landing



Fig.146: Underside of second flight



Fig.147: Carved tread ends to staircase



Fig.148: Leaded lights at first half-landing

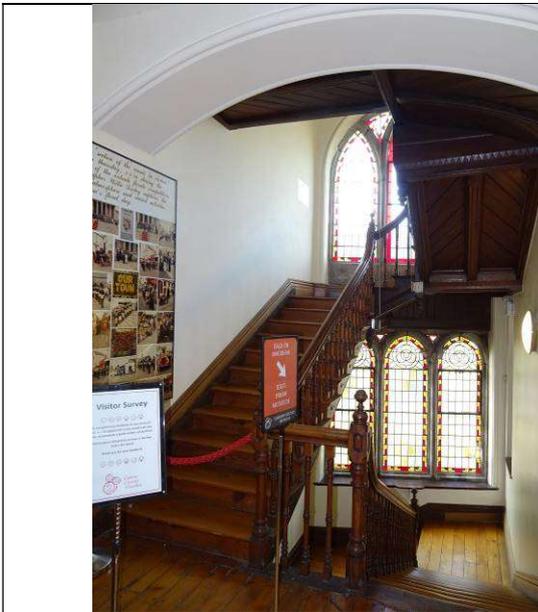


Fig.149: View of stairs from first-floor landing

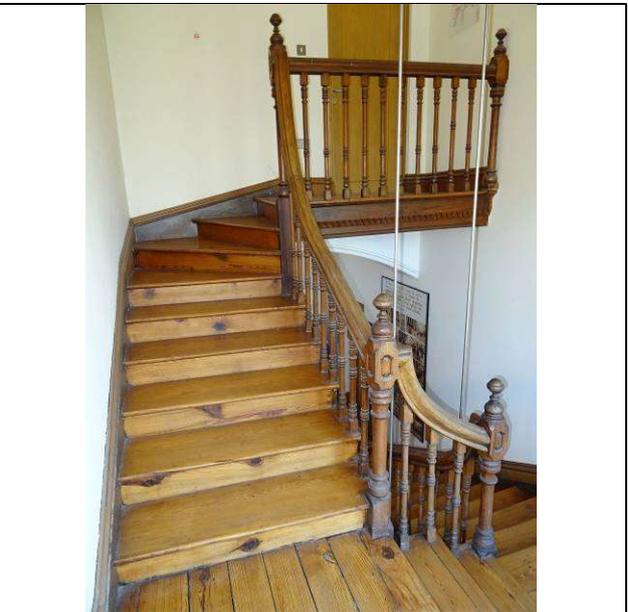


Fig.150: Stairs rising from second-half landing to second floor



Fig.151: Round-headed light to second half-landing of stairs

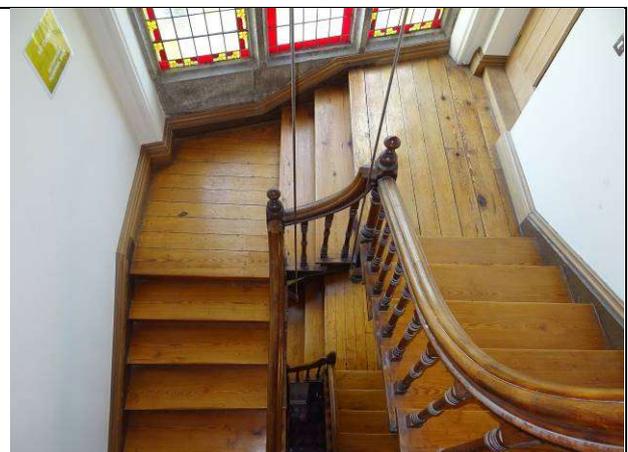


Fig.152: View of stairs from second-floor landing



Fig.153: View of first-floor landing from staircase



Fig.154: First-floor landing



Fig.155: Opening to roof space through which staircase suspension rods hang



Fig.156: Two suspension rods



Fig.157: Ground floor of secondary stairs



Fig.158: Ground floor of secondary stairs, looking south to door that opens to children's reading room

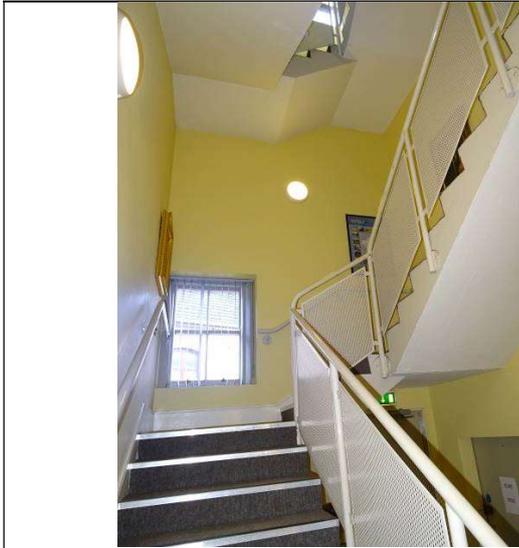


Fig.159: First half-landing of secondary stairs to west



Fig.160: First-floor landing of secondary stairs

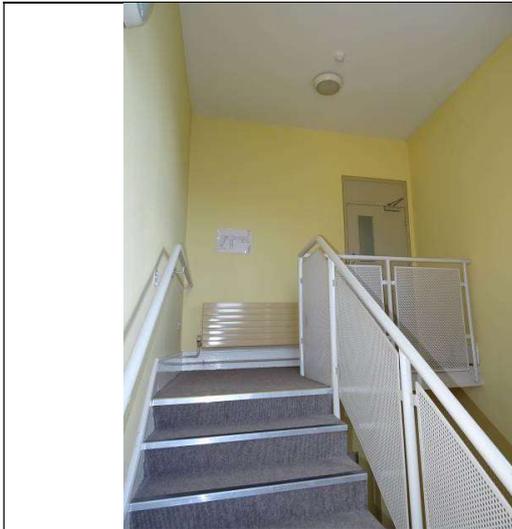


Fig.161: Second floor landing of secondary stairs



Fig.162: Second-floor window at Window to north wall at second floor



Fig.163: First floor, bow-ended room to west, looking east



Fig.164: First floor, bow-ended room to west, looking south



Fig.165: Bow-ended room to west, Carrara marble fireplace



Fig.166: Glazed hearth tiles

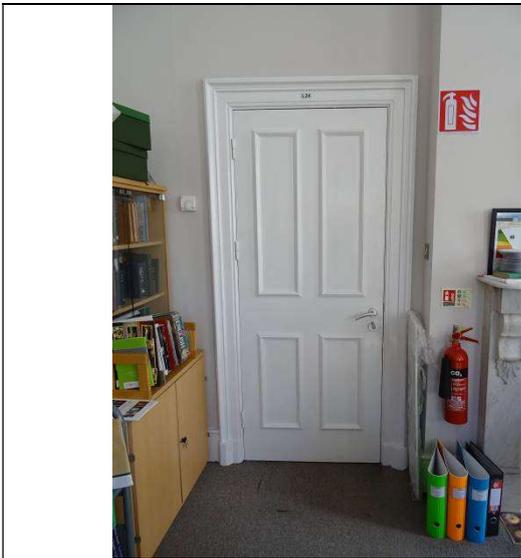


Fig.167: Door from bow-ended room to hall



Fig.168: Window on south elevation



Fig.169: First-floor hallway, looking west



Fig.170: First-floor hallway, looking east

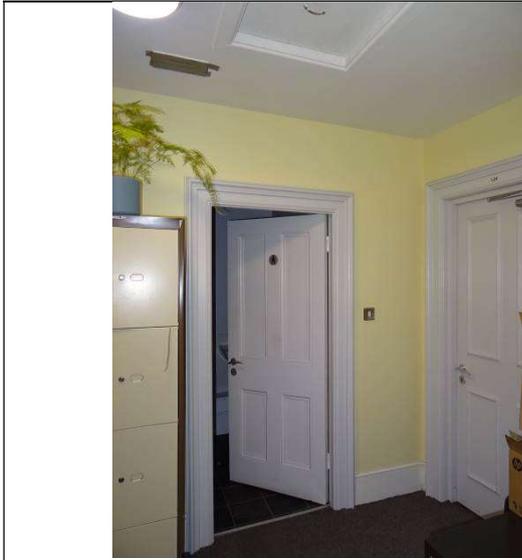


Fig.171: Hallway with doors to bow-ended room to west (r) and WC (l)



Fig.172: One of two WCs to first floor hallway



Fig.173: Fire doors to lobby of lift at first floor



Fig.174: North window to first floor hall



Fig.175: First floor, local history department, looking east



Fig.176: First floor, local history department, looking west



Fig.177: First floor, mid office, looking west



Fig.178: First floor, mid office, looking south

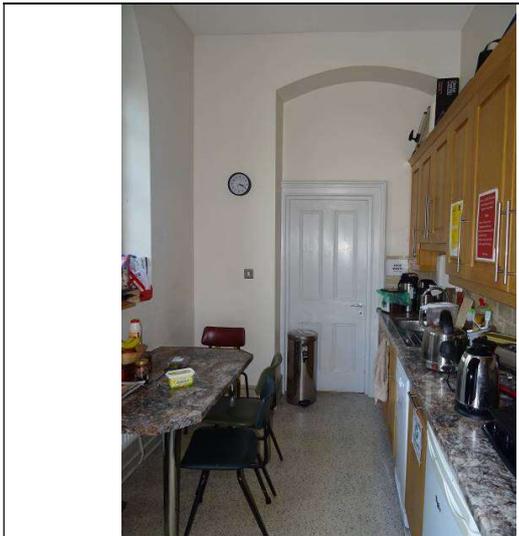


Fig.179: First floor, kitchen to south, looking west



Fig.180: First floor, kitchen ledged lights



Fig.181: Second floor, archive, west room, looking north



Fig.182: Second floor, archive, mid room, looking west



Fig.183: Second floor, archive, west room, door to north opening to hall



Fig.184: Second floor, archive, mid room, looking south



Fig.185: Second floor, archive, mid room, looking north



Fig.186: Second floor, mid room, looking southeast



Fig.187: Second floor, archive, bow-ended room to west, looking west



Fig.188: Second floor, archive, bow-ended room to west, looking south

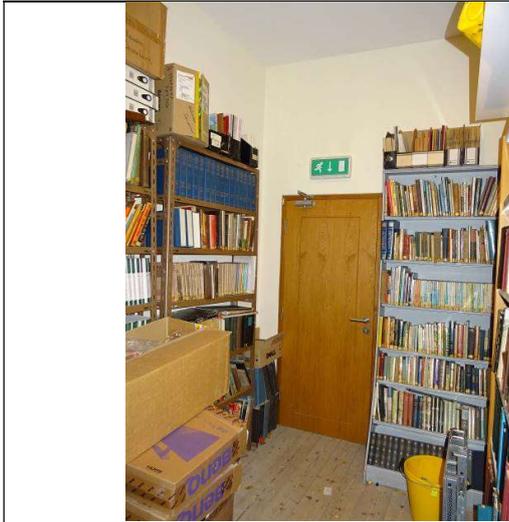


Fig.189: Second floor, store to east of primary stairs, looking west



Fig.190: Second floor, store to east of primary stairs, looking east towards lift



Fig.191: Second floor, storeroom to east of primary stairs, window to north elevation



Fig.192: Second floor, storeroom to east of primary stairs, looking east



Fig.193: Second floor, hallway to north of archives



Fig.194: Second floor, view westwards through lift

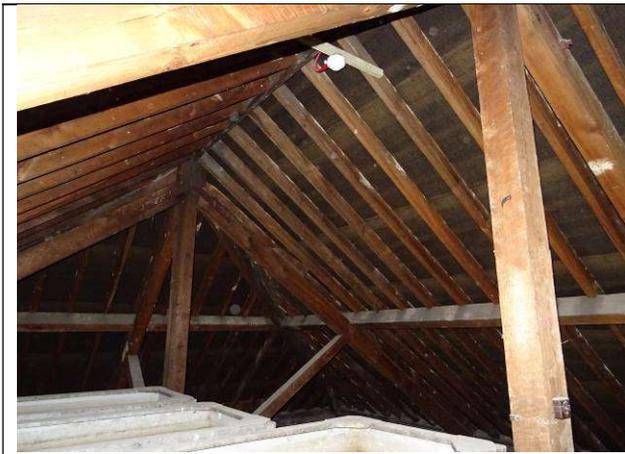


Fig.195: Roofspace, looking east with kingpost trusses, end hip, rafters and purlins

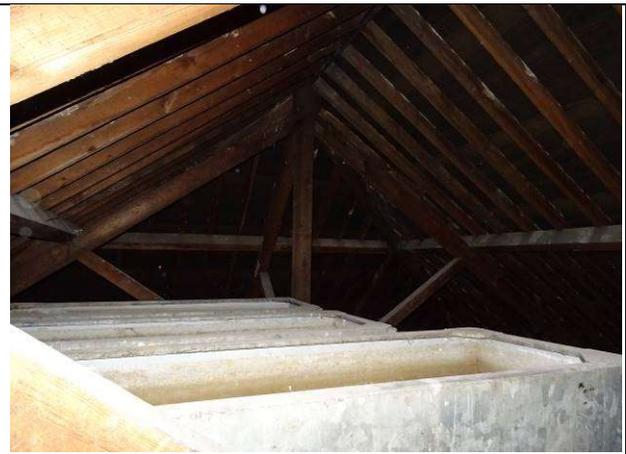


Fig.196: Three open water tanks to east end of roof

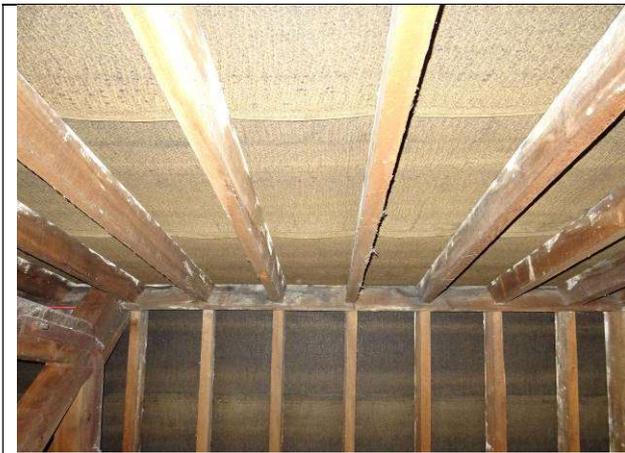


Fig.197: Underside of roof with view up towards ridge board and rafters to either side



Fig.198: Eastern red brick chimneystack



Fig.199: Insulation between ceiling joists to east end of roof



Fig.200: Concrete blockwork to top of lift shaft



Fig.201: Interior of library extension, looking north



Fig.202: Interior of library extension, looking northwest



Fig.203: Interior of bookstore within extension

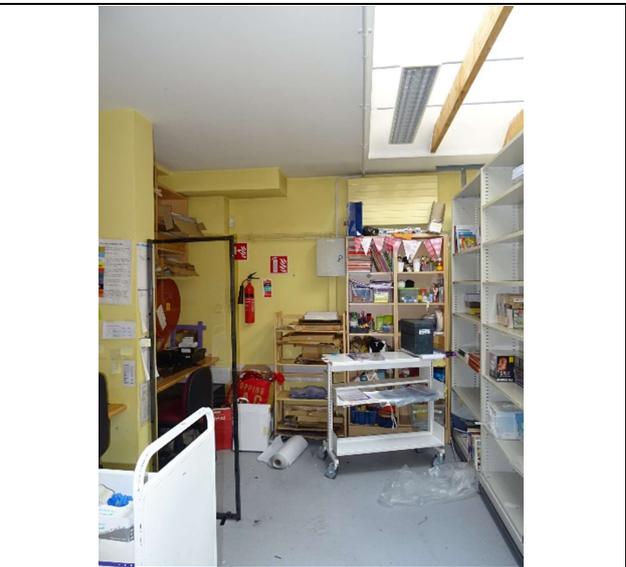


Fig.204: Interior of bookstore within extension



Fig.205: Looking towards the present extension and north-facing slope of Convent roof



Fig.206: The library extension to the north of the former convent. View towards south.



Fig.207: Rear site of library was former convent garden



Fig.208: East elevation of museum building with extension to north, added c.2012

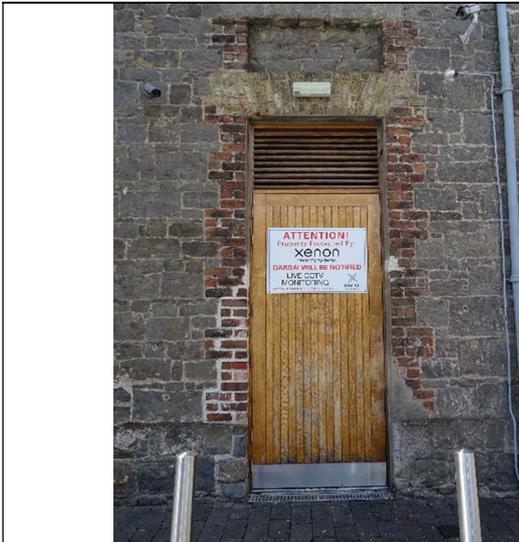


Fig.209: Opening to east elevation of museum



Fig.210: Granite flat arch with brickwork to openings

APPENDIX 2: DRAWINGS

1	Condition Drawing of External Roof
2	Condition Drawing of Front Elevation
3	Condition Drawing of East Elevation
4	Condition Drawing of West Elevation
5	Condition Drawing of Rear Elevation
6	Condition Drawing of Second Floor Room Elevations 1
7	Condition Drawing of Second Floor Room Elevations 2
8	Fabric Drawing of East Elevation of Museum
9	External Recommendations - Front Elevation
10	External Recommendations - East Elevation
11	External Recommendations - West Elevation
12	External Recommendations - Rear Elevation
13	Coal Chute Remediation
14	Railings Refurbishment