

JCA Architects

CONSERVATION SPECIFICATION

Prepared by: Conservation Architect

National Sculpture Factory, Albert Road, Cork

for Cork City Council

A: Courthouse Chambers, 27-29 Washington Street, Cork T12 WN8F

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St. Albert's House, Old Navan Rd Dunboyne, Meath, Ireland A86 K856

T: 353 021 4393800

E: architects@jca.ie

W: www.jca.ie



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Conservation Principles

Method Statement / Scope of Works

The principle of minimum intervention will apply when dealing with elements of historic building fabric. Only the fabric directly impacted by the repair proposals are included in this scope of works.

Conservation core ambitions:

1. To halt the processes of decay by repairing the historic fabric allowing the building a continued use compatible with its historic use.
2. To retain and repair significant surviving building fabric to safeguard and protect the historic structure from further deterioration and enhance the quality of the built heritage within this historic ACA setting

Conservation Principles

Any works to the Sculpture Factory or within its curtilage should be carried out in accordance with best conservation practice, as defined by the Burra and the Venice Charter of 1964, and in subsequent charters. All qualifying conservation repair works will be in accordance with the standards of best practice as outlined in the Department's Architectural Heritage Protection Guidelines for Planning Authorities (2011) and relevant volumes of the Department's Advice Series. A suitably accredited conservation architect should oversee works.

The following basic principles should be always adhered to:

- Conservation work should be based on an understanding of the building and its historical development, and the primary aim should be to retain and recover the significance of the building.
- Any alterations should be carried out in accordance with the principle of 'minimal intervention'.
- Repairs to original fabric should always be favoured over replacement.
- Where replacement of an original element is unavoidable, this should be historically accurate in form and materials.
- Where lost elements must be reconstructed, these should aim for historic authenticity and avoid conjecture in as far as possible.
- Modern interventions should be reversible and if appropriate visually identifiable.
- All work should be recorded.
- Works should be carried out by suitably skilled craftspeople with proven expertise in their trade working with historic buildings.
- All works to be agreed with the conservation architect.

On-site Supervision and Monitoring

Supervision of all works will be carried out by an accredited Conservation Architect.

All stages of works are to be monitored and recorded during regular site inspections, with a view to later compiling this information for dissemination as an educational resource for practitioners in the relevant fields. The contractor is to provide a detailed programme of works in advance to facilitate well-timed visits at critical stages of work.

1.0 Gable Parapet & Flashings

Existing gable mortar parapet capping has broken down in recent years and large pieces have come loose. Loose items have been taken down recently to avoid risk of falling material. The remaining capping is not adequate and requires replacement.



Images above showing loose material which has been removed

Specification

1.1 Removal

- Allow for existing mortar cappings to be carefully dismantled.
- Clean down surface thoroughly to remove all loose debris.

1.2 Lead work

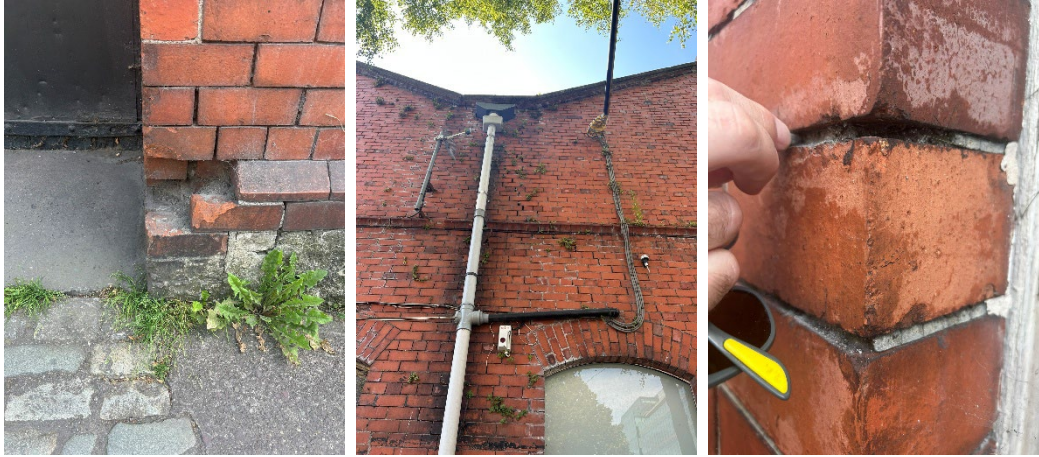
- Lay new code 6 lead DPC on building paper across width of wall.
- DPC to fold down as cover flashing to lower section as per detail 4 on page AR-400. Lead sheets not to exceed 1500mm in length with end to end lap joints of not less than 100mm.
- Upstand at the abutment not less than 75mm and with a lap of 150mm over the pitched roof coverings.
- Lead to be dressed 25mm into brick joint and be fixed with lead wedges at 450mm centres prior to pointing.
- The free end of the cover flashing to be fixed with lead clips of the same code as the lead it is securing. Refer to AR-400 for lead detail drawings.

1.3 Formwork & Limecrete Mix

- Create timber shuttering as formwork to pour new limecrete cappings with drips formed at edges.
- Dimensions to match that of the existing capping.
- Specification for limecrete to be 1 part NHL 5 to 2 ½ parts sharp sand and aggregates for mortar reinforced with Forte Fibre. 175mm overhangs required at locations shown on drawings – allow for rebar to provide additional reinforcement in this area.

2.0 Brick Repointing & Repair

Much of the brick pointing is lost/loose or has been repaired with inappropriate materials. The brick itself remains in good condition although there are several bricks which have spalled or are lost. Settlement cracks are also present which will require crack stitching.



Images above showing missing bricks, settlement cracks & loss of pointing.

2.1 Repointing Specification

2.1.1 Removal of Existing Mortar

- Carefully rake out defective mortar joints by hand using plugging chisels or similar non-powered hand tools.
- Mechanical cutting discs shall not be used unless specifically approved for exceptional circumstances.
- Joints to be raked out to a depth of 25mm.
- Avoid damaging brick arrises.
- All debris and dust are to be removed from the raked joints with a stiff bristle brush.

2.1.2 Mortar

Mortar shall comprise:

- Binder: Natural Hydraulic Lime NHL 3.5 complying with BS EN 459-1.
- Aggregate: Well-graded washed sharp sand matching the existing mortar in colour and grading.
- Mix Ratio: Approximately 1:2.5 to 1:3 (lime : aggregate by volume), adjusted following trial mixes to match existing mortar.
- No cement shall be incorporated.
- Pigments shall not be used unless specifically approved following sample panels.
- Mortar shall be mixed in accordance with the manufacturer's recommendations and allowed to mature where appropriate.

2.1.3 Preparation

- Thoroughly dampen masonry before pointing.
- Brickwork shall be damp but free from standing water.
- Prevent rapid suction from dry masonry.

2.1.4 Pointing

- Compact mortar firmly into joints in layers where necessary to eliminate voids.
- Joints are to be finished flush.
- Do not smear mortar over brick faces.
- Brush back lightly once thumbprint hard.

2.1.5 Curing

- Protect newly pointed work from: direct sunlight, strong winds, frost and heavy rain
- Maintain damp curing for a minimum of 72 hours, extending where conditions require.
- Hessian sheeting and breathable protective coverings shall be used as necessary.
- Works shall not proceed when temperatures are below 5°C and falling, or above 30°C without appropriate protection.

2.1.6 Sample Panel

Before commencement construct a minimum 1 m² sample panel demonstrating: mortar colour, aggregate grading, joint profile and finish. Obtain Architect/Conservation Architect approval before proceeding.

2.2 Brick Pier Repair Specification

2.2.1 Scope

- Allow for 1 no. pier internally to be repaired to dado level where the outer bricks have perished.
- This will involve some brick replacement.
- Replacement units to match the existing imperial size.
- Allow for surface plastic mortar repairs also.

2.3 Crack Stitching

2.3.1 Scope

- The existing brick displays a number of settlement cracks which are highlighted on drawing AR-300.
- These cracks are to be repaired with a suitable proprietary helibar crack stitching product.
- Product to be installed to manufacturer's recommendations.
- Allow for joint to be infilled with lime mortar as per the specification above.

3.0 Rainwater Goods

Existing cast-iron rainwater goods to be inspected, repaired, refurbished and redecorated including gutters, downpipes, brackets, shoes, bends and associated fittings. One additional downpipe to be installed to west elevation to reduce travel distance. Allow for the replacement of 20% of the rainwater goods where elements are beyond repair.

Existing cast-iron rainwater goods are to be regarded as repairable by default. Replacement shall only be undertaken where deterioration is such that repair is no longer technically or economically viable and following approval by the Architect.

Replacement components shall replicate the original sections exactly in profile, dimensions and appearance to maintain the historic character of the building.

3.1 Inspection

- Inspect all rainwater goods before commencing work.
- Record defects including cracking, corrosion, distortion, failed joints, loose fixings and previous inappropriate repairs.
- Notify the Architect of any components considered beyond repair prior to replacement.
- No items shall be replaced without approval.

3.2 Removal

- Carefully dismantle rainwater system.
- Ensure all adjacent roofs and brickwork are protected.
- Retain reusable fittings where possible.

3.3 Repairs

- Remove existing rust and finishes using a wire brush.
- Allow for localised repairs using specialist metal repair techniques where appropriate.
- Abrasive blasting only to be used where specifically approved and where it will not damage the material.
- Remove all dust and debris prior to painting.

3.4 Replacement Components

Allow for 20% of all components to be replaced. Replacement items shall:

- Be traditional cast-iron.
- Match the original profile in terms of profile and dimensions.
- Be supplied factory primed.
- Be installed to replicate existing falls, fixing centres and joint arrangements
- Existing fixings should be replaced with new stainless steel.
- Existing fixing positions to be used where possible
- Avoid unnecessary drilling into historic masonry.

3.5 Finishing

- Allow for one coat metal primer followed by an intermediate coat and one finishing coat of exterior metal paint.
- Colour to be agreed on site.
- Allow for adequate drying times between coats in accordance with manufacturer's recommendations.

3.6 Testing

Upon completion:

- Flush gutters and downpipes with clean water.
- Check falls and outlets
- Ensure the complete system is watertight and free-flowing.
- Rectify any leaks or standing water

4.0 Windows & Doors

All joinery works shall be carried out by an experienced joinery contractor with demonstrable experience in the repair and manufacture of traditional timber windows on historic buildings.

Prior to manufacture, all dimensions shall be verified on site. Existing openings shall be carefully measured and any discrepancies reported to the Architect.

Timber shall be sustainably sourced hardwood (Accoya may be substituted subject to approval) with a moisture content appropriate for external joinery.

Prepare shop drawings and full-size profile drawings for approval prior to manufacture.

A sample section of glazing bar and frame profile shall be submitted for approval before production.

4.1 Window Type A (W1-01 to W1-03)

4.1.1 Scope

- Carefully remove the existing windows in their entirety.
- Protect surrounding masonry finishes during removal.
- Dispose of removed windows off site.
- Supply and install new painted timber windows to match the arrangement shown on the drawings.

4.1.2 Construction

Provide:

- Painted hardwood windows.
- Traditional glazing bar arrangement as indicated.
- Profiles to match existing upper section of Window Type B.
- Concealed foam weather seals by Schlegel or equivalent.
- Ironmongery suitable for painted timber windows.
- Single glazing with traditional putty beading.

4.1.3 Finishes

Factory prime all joinery.

Apply:

- One undercoat.
- Two coats exterior paint (Teknos joinery paint or equivalent)

Colour to Architect's approval.

Seal all perimeter junctions with appropriate compressible seal and sealant.

4.2 Window Type B (W0-03, W0-07 & W0-08)

4.2.1 Scope

- Retain the existing timber window frames wherever sound.
- Carry out repairs to the upper opening casement.
- Replace the complete lower fixed glazed section.
- Repairs shall retain the maximum amount of original historic fabric.

4.2.2 Upper Casement Repairs

Carry out specialist timber repairs including:

- Removal of defective timber.
- Splicing in new matching hardwood.
- Repair or replacement of glazing bars where decayed.
- Repair of rails, stiles and meeting rails.
- Repair of glazing rebates.
- Repair of joints using traditional joinery techniques.
- Renewal of defective putty.
- Overhaul existing ironmongery.
- Ease and adjust opening sections.
- Replace worn weather seals where required.

Replace only timber demonstrated to be beyond repair.

4.2.3 Lower Fixed Section

Carefully remove the existing lower fixed light. Supply and install a new painted hardwood fixed glazed section incorporating:

- 8-pane glazing arrangement as shown.
- Glazing bars to exactly match the original profile used in the upper casement.
- Matching frame sections.
- Matching mouldings.
- Traditional detailing throughout.

Install without damage to retained historic fabric.

4.2.4 Timber

New timber shall be European Oak, Sapele, or Accoya (subject to approval) free from sapwood, shakes and large knots.

4.2.5 Glazing

Glazing to be single glazing with traditional putty finish.

4.2.6 Decoration

Following repairs:

- Remove all loose and defective coatings.
- Prepare surfaces by careful sanding.
- Prime all new timber.
- One undercoat.
- Two coats exterior paint (Teknos joinery paint or equivalent)

Colour to be confirmed on site

4.3 Door Type A (D0-03)

4.3.1 Scope

Carefully remove the existing double-sheeted timber door from its frame and transport to a specialist joinery workshop for repair.

Retain the maximum amount of original historic fabric. Repairs shall follow the principle of minimum intervention, replacing only those elements that are beyond repair.

Protect the existing door frame and surrounding masonry during removal and reinstatement.

4.3.2 Timber Repairs

Carry out repairs using traditional joinery techniques.

Works shall include:

- Removal of decayed timber back to sound material.
- Carefully scarfing in new timber sections to match the original species, grain orientation and profile.
- Repair or replacement of bottom rails where decayed.
- Repair of stiles, rails and framing members as required.
- Repair of mortice and tenon joints.
- Consolidation of sound but weakened timber where appropriate using approved conservation repair systems.
- Replace individual members only where repair is not technically feasible.

All repairs shall be neatly executed and visually unobtrusive.

4.3.3 Boarding

Carefully inspect the external and internal timber sheeting.

Replace only boards exhibiting advanced decay or structural failure.

Replacement boarding shall:

- Match the existing board width, thickness and profile.
- Match the existing fixing pattern.
- Be installed using traditional concealed fixings where appropriate.

Retain all sound boarding.

4.3.4 Timber

Replacement timber shall be:

- Durable hardwood (European Oak, Sapele or Accoya, subject to approval).
- Sustainably sourced.

- Straight grained and free from defects.
- Moisture content suitable for external joinery.

4.3.5 Decoration

Following completion of repairs:

- Remove all loose paint.
- Carefully sand surfaces without altering mouldings or historic character.
- Fill minor defects using an approved exterior timber repair compound where appropriate.
- Prepare all surfaces for decoration.

Apply a complete paint system comprising:

- Spot prime all bare timber.
- One full primer coat.
- One undercoat.
- Two coats exterior paint (Teknos joinery paint or equivalent)

Colour to be agreed on site.

All faces, edges, rebates and concealed timber surfaces shall be fully coated before reinstatement.

4.3.6 Reinstallation

Rehang the repaired door within the existing frame.

Adjust to ensure:

- Smooth operation.
- Even clearances.
- Correct alignment.
- Proper engagement of locks and latches.
- Weather-tight closing.

Renew fixings where required using stainless steel or other approved corrosion-resistant fixings.

5.0 Internal Plaster Repairs

The internal face of the walls are finished with a smooth plaster above a timber dado rail with painted brick finish beneath the dado rail.

In a number of locations the plaster has blown because of the moisture ingress through defective gable parapet cappings, failing rainwater goods and loss of brickwork pointing.

Only when the fabric has sufficiently dried out attempt to repair the areas of blown plaster directly impacted by moisture ingress.

The locations most affected by moisture ingress are highlighted on the drawing AR-200.

5.1 Testing & Removal

- Using a hammer, gently tap the plaster listening for any hollow sounds where plaster has blown.
- Carefully remove blown plaster without damaging the substrate below.
- If saturated, allow sufficient time for the substrate to dry out.

5.2 Lime Plastering

- Internal plasterwork should be applied in three coats: scratch, float and finish.
- Daubing out where there are large gaps or holes in the plaster may be done before the scratch coat, using 1 part lime putty (or NHL 2) to 3 parts sand (ordinary plasterer's sand, clean, well-graded and sharp), with the addition of animal hair (goat or yak). Hair should be added in all coats other than the finish coat at 3kg per M3.
- Surfaces to be plastered should then be cleaned and pre-wetted. A weak limewash at 1 putty to 9 water should be used.
- The scratch coat should then be laid on at 1:3 (lime putty, sand and hair), and should not exceed 12mm in thickness. It should be finished with a wood float. Any shrinkage should be closed down with the wood float. The scratch coat while still soft should be scratched (diamond style on timber laths). The next coat should only be applied when the scratch coat has set hard.
- The scratch coat should then be pre-wet and a float coat applied at 1:3 (lime putty, sand and hair) to an average thickness of c. 8mm. Close any shrinkage cracks as before and scratch lightly with a devil float.
- In winter allow seven days between coats to dry.
- The float coat should be pre-wet and finish coat applied to c. 3mm thick at 1:3 (1 putty: 3 sand). No hair is used in this coat. The sand should have a maximum particle size of 1mm.
- Pre-made finish coat can be used called 'Fine Finishing Stuff' as supplied by Stoneware Studios, Roundtower or equivalent.

5.3 Finishing

- Allow for coat of primer and 3no. coats of breathable paint finish to plastered areas.