

MAKE – Refurbishment Method Statements, External Fabric

The below information has been extracted from the MAKE Stage 4 – Architectural Specification. For ease and simplicity of the reader, only relevant information has been submitted in relation to the sign-off on Condition 10 for the Broadway Annex.

ALT-401 Stone Repair/ Renovation

Specialist renovation of existing natural stonework externally.

- a) The works include (but may not necessarily be limited to) the following:
 - i) The natural stone plinth on which the planters are located.
 - ii) Ornamental planted urns.
- b) The works are to be undertaken by a specialist sub-contractor with a demonstrable portfolio of similar projects for a period of not less than 10 years.
- c) The ostensible defects include surface spalling and pitting, edge damage, minor cracks and general soiling.
- d) Ensure that all panels forming the planter plinth are secure and are not rocking or otherwise presenting as loose.
- e) The remedial works are to include the infilling of the pitting and surface crevices using specialist stone repair compounds with matching blended dust.
- f) Similarly, on the damaged edges, these are to be reinstated as far as possible using the same methodology.
- g) The refurbishment of the urns is to include the inside surface. Where, in the opinion of the stonework specialist, the urns would benefit from a surface liner or sealer coat to separate the stone from the planting media, this application is deemed to be part of these works.
- h) All elements are to be subject to a benign nebulous clean to remove atmospheric soiling or other surface stains.

ALT-402 Masonry Repair/ Renovation - Externally

Refurbish existing brickwork by means of one or a combination of processes defined herein.

- a) Existing situation: The construction of the external walls is understood to be a nominal 390mm overall cavity wall comprising an outer skin of 4.5 inch imperial facing bricks, 50mm (2 inch) cavity and one brick thick, 9 inch imperial format cellular fletton.
- b) Purge the wall of all traces of lichen and moss, ivy and other vegetation minimising avoidable damage to the brickwork and pointing. Some vegetation may have penetrated through to the interior which will need to be completely neutralised and removed.
- c) Re-bed any loose concrete sills and stone copings.
- d) Spot replace any brick units which are fractured or have spalled beyond a point of acceptable reinstatement, using a matching replacement brick unit acceptable to the Employer's Agent via the sample submission process.
- e) Remove and re-bed any brick units which have debonded.
- f) Allowance to be made to repoint areas of brickwork where the joint has become damaged through vegetation growth or other causation resulting in the degradation of the joint.
- g) Repointing requirements:
 - i) Localised brick replacement and re-pointing in defective areas as per the Design Drawings and Façade Cleaning Report.
 - ii) As a minimum joints which have recessed by more than 10mm should be raked-out and re-pointed. Joints should be raked-out and pointed to twice the joint width to ensure longevity.
 - iii) Rake out existing dilapidated mortar to a depth of 15mm.
 - iv) Using a fibre bristle brush, ensure the joint is thoroughly purged of residue before repointing takes place.
 - v) The formed recess to be geometrically square.
 - vi) Wall is to be dampened before repointing commences, but under no circumstances saturated/ inundated.
 - vii) New pointing mortar should be mixed to match the original, trial panels should be produced for agreement by all parties and the panels retained nearby the building throughout the work as a reference.
 - viii) Repointing to commence from the top left hand corner working across and downwardly, completing 2m² at a time.

- ix) The mortar is to be of a traditional hydraulic lime based composition. The determination of mix remains the responsibility of the Contractor.
- x) Profile: To match the existing condition, unless existing condition is modern cementitious type.
- h) The works are to be left tidy and free from mortar residue on the brick face to the satisfaction of the Employer's Agent.
- i) Refer to system ALT-301 describing brickwork cleaning.
- j) External paint finish where shown on the Design Drawings.
- k) Refer also to the External Masonry Report.

ALT-403. Refer to the Façade Cleaning Report.

- a) The Specialist Sub-contractor is to carry out a Condition Survey to schedule and detail all areas of masonry to be cleaned.
- b) Specimen trial areas to be agreed with the Employer's Agent to determine the best possible outcome.
- c) The cleaning should be carried out using the least amount of water possible supplemented by localised cleaning with steam where necessary.
- d) Methods of cleaning include, but not be limited to, the following:
 - i) Nebulous Spray or Intermittent Mist Spray.
 - ii) TORC Vortex Masonry Cleaning.
 - iii) DOFF High Temperature Vapour Masonry Cleaning System.
 - iv) Normal dust/dirt from the relatively smooth surfaces of stone and concrete can be effectively removed by the DOFF system. However, heavier soiling such as mineral crusts could not be effectively or efficiently dislodged and may require the TORC system.
- e) Demonstrate the non-destructiveness and effectiveness of the system on areas of visually inconspicuous masonry agreed with the Employer's Agent .

ALT-704 Alteration to Existing Roof

Alterations to the existing overhang single pitch flat roof to expose formerly covered roof glazing and repair membranes and flashings to deliver complete integrity.

- a) The works are to be undertaken by a current member of NFRC (National Federation of Roofing Contractors) or an acceptable third-party accreditation/ competence scheme.
- b) Carry out a full survey including digital imagery to provide a report on the complete refurbishment to ensure the roof and its ancillary elements are watertight, preventing any damp/ water ingress through the finishes.
- c) The survey is to include a roof integrity test ('spark test') on completion of the works.
- d) Remove felt coverings and expose formerly redundant roof glazing units, ensuring that the roof membrane is adequately weathered. The works are to be co-ordinated with the repairs to the metal framed roof glazing - Refer to Type ALT-805.
- e) Repair rainwater discharge:
 - i) Clear blocked gutters and hoppers.
 - ii) Repair damage to pipework where this is possible with spot element replacement of fittings where the nature of the defect is beyond repair.

ALT-706 Repairs to Asphalt Flat Roof

Repairs and refurbishment to existing mastic asphalt flat roofs.

- a) Thermal performance: U-value 1.80 W/m²K
- b) Complete refurbishment to ensure the roof and its ancillary elements are watertight, preventing any damp/water ingress through the finishes.
- c) Carry out a full survey, including an initial electronic integrity test, together with supporting digital imagery, to provide a report addressing the source of the ingress into the building and the measures necessary to ensure the roof and its' ancillary elements are watertight, preventing any further damp/water penetration.
- d) Where, as a result of age, the asphalt has cracked or otherwise become compromised, ensure that before a remedial over-layer or torch-on patch is applied, the area around the crack is reinforced to prevent it transferring through into the new layer.
- e) Repair rainwater discharge:
 - i) Clear blocked gutters and hoppers.

- ii) Repair damage to pipework, where this is possible, with spot element replacement of fittings where the nature of the defect is beyond repair.
- iii) Check and refasten all gutter and downpipe brackets where they have become loose.
- f) The existing flat roof on the East Wing will interface with a section of new extended roofing described under system Type RFS-201.
- g) Renew all defective membranes and insulation. Insulation installed on underside of roof slab. Insulation to be renewed to improve performance to meet building regulations.
- h) Replace all gutters and downpipes including brackets with like for like for gutters that are beyond repair and downpipes which are replaced with new.
- i) Upon completion, undertake a further electronic integrity test to demonstrate the refurbished system is completely watertight.

ALT-781 Alteration to Existing Timber Rooflight

Adapt existing glazed timber rooflight to accommodate AOV (Type DRS-605 described in Section L20E of the Architectural Specification) as part of the refurbishment required for the performance integrity.

- a) Carry out an outline level condition survey of the rooflight including the measures necessary to ensure it is structural sound, thermally adequate and weather resistant.
- b) Deglaze existing glass substance and evacuate all redundant glazing compound.
- c) Replace any defective timber elements.
- d) Modify the framework as necessary to accommodate the new AOV including fabricating as a single element unit with mock glazing bars to match the aesthetic of the fixed glazing sections.
- e) Where a thermal improvement is required, replace glazing with new thermally performing glazing units.
- f) Coordinating with the Services Engineer, install the AOV.
- g) Reinstall paint finish to replicate the original condition both internally and externally.

ALT-805 Repairs to Glazing/ Rooflight

Repairs to roof glazing/ rooflights.

- a) Undertake an outline level condition survey summarising the status of the rooflights and the proposed remedial measures necessary to return them to a near to new state of repair.
- b) Examine all glazing to ensure it is steadfastly retained within the frame. Where any unit presents as loose, carefully remove, hack out depleted glazing compound and re-bed with new material.
- c) Routinely replace any cracked or otherwise damaged glazing units with matching glass type.
- d) Review all perimeter seals and abutments with primary fabric and renew sealant.
- e) Refurbish metal frames.
 - i) Remove by abrasion loose and surface oxidation and treat with a proprietary high performance inhibitor.
 - ii) Rub down existing paint finish to both sides of door and frame.
 - iii) Re-prime and undercoat as a precursor to protective decorative top coat as PT-210.
- f) The works entail all retained rooflights and roof glazing systems in and around the building and additionally the removal of 1 No. rooflight from its current location and relocation elsewhere in accordance with the Design Drawings. The outline scope of works for this element are as follows:
 - i) Digitally record the status of the roof light in situ before works commence.
 - ii) Carefully deglaze.
 - iii) Minimising trauma to the substrate, dismantle/ remove the framework.
 - iv) Make weathertight the resultant opening until the permanent works are able to be installed.
 - v) Install the rooflight in the new opening and seal perimeter.
 - vi) Re-glaze with new substance should there have been any dimensional variance apparent within the new opening.
 - vii) Loading: The system is to be designed as a non-fragile roof construction in accordance with CWCT TN66/67, Class 1.

viii) Thermal performance: 1.6 W/m² K as an average performance for the fixed glazing in accordance with BS EN ISO 10077: Part 2

ALT-858 Refurbishment of Fire Escape Stair

Refurbishment and regulatory upgrade of existing fire escape.

- a) Undertake an outline condition report of the stair, summarising current condition and the proposed measures to revert them to current code compliance and a near to new state of refurbishment.
- b) Ensure all fixings back to the primary building fabric are steadfast and secure. Any fixings exhibiting movement are to be carefully removed and re-set using a high performance chemical/ epoxy compound.
- c) Check all joints both mechanical and welded to ensure they are stable and in tact.
- d) Close risers, the method of which to be agreed with the Employer's Agent.
- e) Replace existing perforated tread plates with solid/imperforate sheet.
- f) In cases where additional flight is required new flight to match existing.
- g) Extend balustrade where necessary and provide additional vertical guiding where required for compliance.
- h) Remove any surface corrosion and treat with a proprietary high build inhibiting product.
- i) Remove dilapidated paint finish, prepare, re-prime and apply external metal paint system Type PT-210 described within Section M60.

PT-210 External Metal Finish

Site applied exterior paint finish to internal and external conditions.

- a) Manufacturer: AkzoNobel, or acceptable equivalent.
- b) Reference: Refer to Finishes schedule.
- c) Colour: Refer to Finishes schedule.
- d) Preparation:
 - i) All traces of old paint should be removed from the frame, starting with a wire brush, then using wire wool and finally wet and dry paper ("wet flattening" method) before being wiped off with a damp, lint free cloth.
 - ii) For existing refurbished metal windows/ grilles/ rainwater pipe. Refer also to Sections C50 and C90 of the Architectural Specification and the specific workmanship clauses covering preparation of existing surfaces in this Architectural Specification.
- e) Initial coat(s):
 - i) Application of zinc-rich paint ("cold galvanising" method) to any part of the frame with damage to the galvanised finish, compatible with zinc phosphate-rich primer, undercoat and the exterior grade metal paint system specified herein.
 - ii) Application of 1 No. coat of Primer and undercoat, both compatible with the exterior quality paint system specified herein.
- f) Finishing coat(s): As manufacturer's recommendations.
- g) Application: By brush.