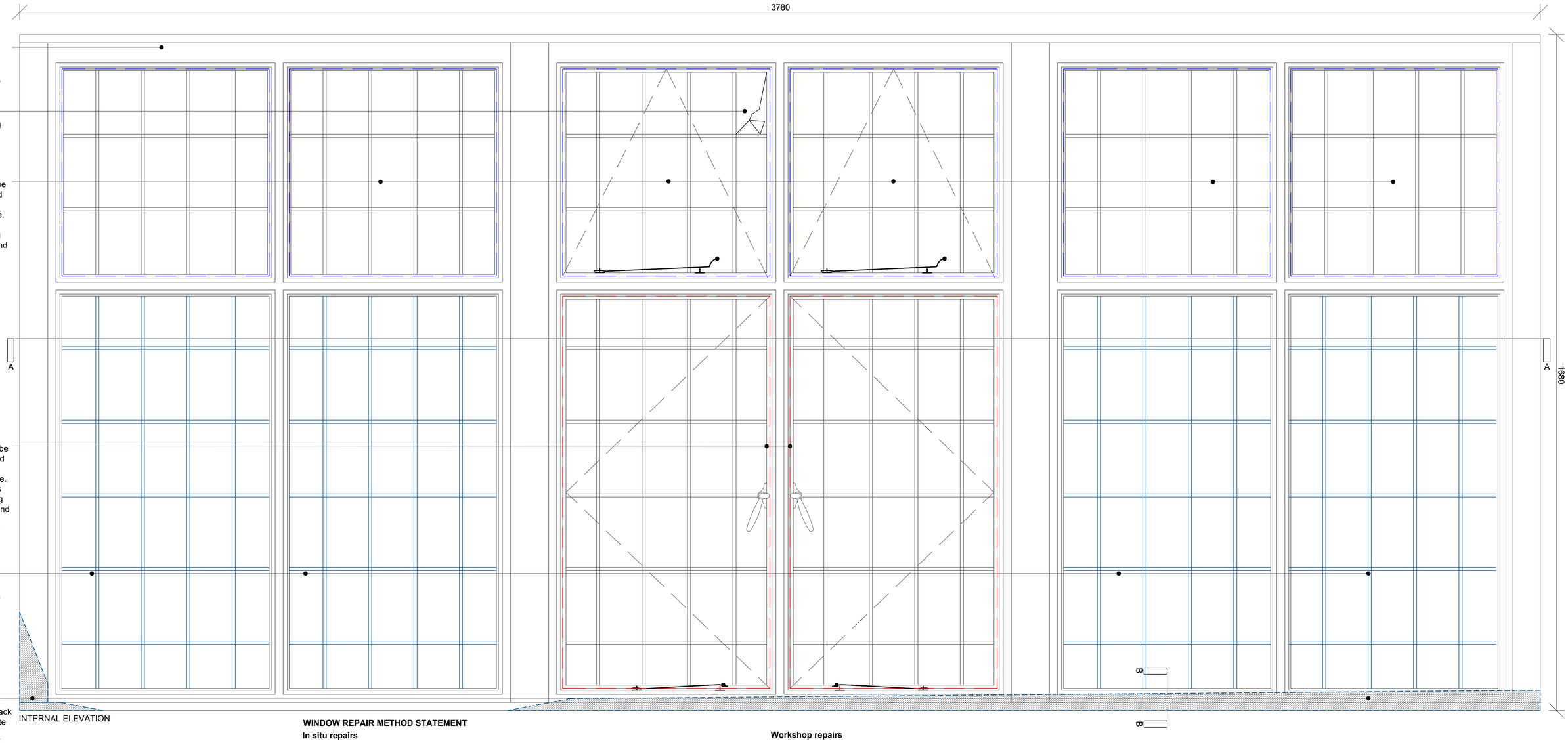

INTERNAL ELEVATION

WINDOW REPAIR DRAWING 1:5

WINDOW REPAIR METHOD STATEMENT

In situ repairs

Degreasing and removal of debris and dust should be carried out as part of the regular maintenance of steel windows and in preparation for any repairs. Degreasing can be carried out using the same methods as for wrought iron windows (see above). The removal of debris and dust can be assisted by careful brushing and vacuum cleaning.

All hardware (except hinges) may have to be removed and glazing masked or temporarily removed, depending on condition.

In situ stripping back of paint and rust to healthy metal may be carried out using a variety of tools such as needle guns, disc sanders, hand scrapers, wire brushes and sandpaper. Grit blasting is an alternative but extra care should be taken as the blasting medium can collect in crevices where it holds moisture and can cause rust or distortion through build up. Health and safety considerations relevant to the removal of lead-based paint should be observed carefully. Paint samples should be taken to assist with the identification of the original colour scheme. Rub down, prime exposed metal and repaint.

Stripped metal should be primed with a rust inhibitor immediately to avoid the re-formation of rust on exposed surfaces.

Once stripped of paint and/or cleaned of rust, window frames and casements are to be realigned, adjusted and eased so that all operable windows are returned to good working order.

Condition and the extent of necessary repairs are assessed at this stage and a decision made on whether to carry out in situ repairs or to remove the window for repairs at a workshop or to replace it.

Metal repair In situ may involve the use of metal fillers. Piecing in of new metal using brazing (rather than welding) because of its versatility and reduced fire risk. Replace metal from suitable reclaimed windows, or adjusting currently available steel window profiles.

Repair operators, hinges and locks using a fine wire wheel. Operators may have small lubrication holes and these are sometimes painted over. Mechanisms may have seized and can be repaired by flushing out the gears, then freeing the works by oiling. Missing or broken hardware and hinges should be replaced to match existing on other windows.

Depending on the degree of distortion, de-glazing and re-glazing may be necessary. Cracked or broken glass and failing putty should be replaced. Re-placement putty should be appropriate to the use and be allowed to harden for approximately two weeks or longer before it is painted to match the colour of the fenestration. Silicone sealant is not aesthetically appropriate and should not be used.

Painting should be carried out with suitable primer and two finish coats.

Workshop repairs

In cases of severe deterioration, the window will be removed and taken to a workshop.

Once in the workshop, removal of flaking paint and corrosion can be carried out in a chemical bath of phosphoric acid. Unevenly distributed rust may have to be grit blasted. Test areas should always be carried out to determine the correct air pressure and size of grit, starting at a pressure of 40psi with a fine grit (usually copper slag) and not exceed 60-70psi. BS standards for abrasive cleaning should be carefully interpreted before applying to historic steel sections.

As with in situ work the stripped metal should be primed with a rust inhibitor immediately to avoid the re-formation of rust on exposed surfaces. Then realignment can be carried out as necessary using heat and pressure. Any perished metal sections may then be cut out and replacement matching metal sections welded in. Replacement metal can either be taken from matching salvaged windows or suitably adjusted, currently available sections. Matching replacements can be specially fabricated but this will be more expensive.

Where appropriate, the repaired window can be powder-coated to the required colour over hot-dip galvanising, a zinc-coating process which improves rust and corrosion resistance reducing the requirement for regular maintenance.

Metres
0 0.1 0.2

GENERAL NOTES

1. Do not scale from this print or use as a template.
2. All dimensions must be verified on site before any work is put in hand and any discrepancies must be reported to the Architect. Where any variations occur between small scale and detailed drawings, detail drawings should be worked from.
3. Copyright of this drawing is reserved by Osbornes and is issued on condition that it is not copied or disclosed to any third party either wholly or in part without the consent of Osbornes in writing.

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CLIENT AMBASSADOR THEATRE GROUP
PROJECT MANCHESTER OPERA HOUSE
TITLE WINDOW REPAIR DRAWING AND METHOD STATEMENT
SCALE 1:5
DATE JAN 2021
DRAWN TL
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