

Initial Inspection Report



Project:	Publicity House Refurbishment of External Fabric
Client:	Msunduzi Municipality and Independent Development Trust

Revision	Date	Prepared By	Checked
-	19 Apr 2013	BR	BR

1.0	<p>Inspection</p> <p>A visual inspection of the external areas only of Publicity House was undertaken, on the 1st & 5th April 2013; access to the attic space and roof area was not facilitated. The inspection was concentrated on the northwest and southwest facades of the building.</p> <p>This report is intended to identify the typical problems present, and to recommend suitable remedial actions, in order to assist in the determination of the extent of works required, for cost estimation purposes only: it does not constitute a specification for the works.</p>
2.0	<p>Context of Report</p> <p>In advance of any building operations, sufficient surveys, investigations, evaluation and recording must be undertaken to give reasonable confidence that the building, with its development and history, is sufficiently understood. This to ensure that nothing of material value is likely to be damaged or destroyed, and the work will be appropriately designed and specified.</p>
3.0	<p>Building Elements (external fabric)</p> <p>The principal elements of the building fabric that were subject of inspection are:</p>
3.1	<p>Brickwork and Mortar</p> <ul style="list-style-type: none"> 3.1.1 Identification of Problems in Brickwork 3.1.2 Repair of Brickwork 3.1.3 Repair of Mortars & Pointing 3.1.4 Cleaning of Historic Brickwork
3.2	<p>Render & Plaster Mouldings</p> <ul style="list-style-type: none"> 3.2.1 Identification of Problems 3.2.2 Repairs to Renders
3.3	<p>Timber Windows</p> <ul style="list-style-type: none"> 3.3.1 Identification of Problems in Timber Windows 3.3.2 Maintenance of Timber Windows 3.3.3 Repair of Timber Windows
3.4	<p>Roofs, Rainwater Goods and Cast-Iron Elements</p> <ul style="list-style-type: none"> 3.4.1 Identification of Problems in Roof and Rainwater Goods 3.4.2 Repair of Roof 3.4.3 Repair of Rainwater Goods & Cast-Iron Elements
4.0	<p>Recommendations for Future Maintenance</p>

3.1 Brickwork and Mortar

3.1.1 Identification of Problems - photographs



photo 1

Extent of exposed brickwork: to the west, south & east elevations, at 1st floor level and surrounding window heads only at ground floor level. The entire structure however, is most likely in brick with a decorative render finish.

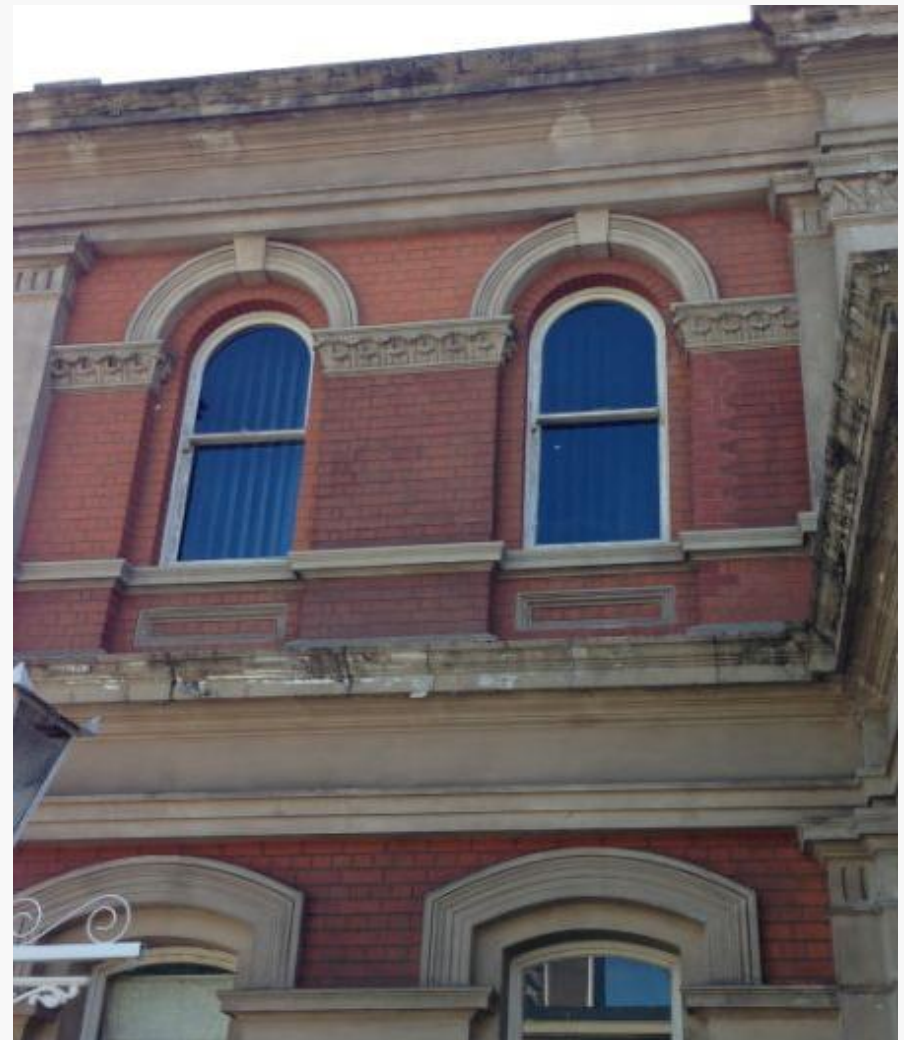


photo 2

The brickwork generally appears to be in good condition, with little evidence of decay or spalling. There is evidence of previous repair work having been carried out to the half-round window heads at 1st floor, and to some of the window reveals, also at 1st floor level.

3.1 Brickwork and Mortar

3.1.1 Identification of Problems - photographs



Photo 3

Insensitive insertion of an air-con unit to the southwest elevation – this has destroyed the decorative inlaid brick detail, and render plinth below.

3.1.1	<p>Identification of Problems</p> <p>Before any remedial actions are undertaken, it is important to assess and determine the most likely causes of damage to the brickwork, to ensure that the proper solutions are implemented, and that an appropriate maintenance plan can be put in place to minimise recurrence.</p> <p>STRUCTURAL DEFECTS: There is no evidence to suggest that there are structural defects in the brickwork, with signs of only very minor and infrequent local cracking of individual bricks.</p> <p>BRICK DECAY: There are little or no signs of spalling or brick decay.</p> <p>MORTAR DECAY: All mortar appears to be in reasonable condition, however, this must be checked carefully on site to ensure no significant decay.</p> <p>NOTE 1: special attention to be taken to those areas where previous repair works were carried out i.e. to the window heads of all first floor windows, and to some reveals of first floor windows.</p> <p>NOTE 2: the northeast façade (high level only) was not visible – any brickwork present here is to be assessed further.</p>
3.1.2	<p>Repair of Brickwork</p> <p>It is not envisaged that any brick replacement will be required to Publicity House: provided that there is no damp ingress or structural concerns, all bricks should be left alone.</p> <p>Where any significant defects arise e.g. spalling of the fireskin, the first course of action would be the reversing of the brick (rather than replacement) – however, this should not be undertaken where there is a high likelihood that the new face will deteriorate in the same manner as the original face, once exposed to the weather.</p>
3.1.3	<p>Repair of Mortars & Pointing</p> <p>Should repair of the existing mortar be required, the existing mortar (or mortars) must be analysed to determine the class of binder, aggregate type, size and grading, and the ratio of binder to aggregate. New mortars for repairing, rebuilding or repointing should match the original mortar (unless it was always defective) in the class of lime, aggregate type, ratio, colour, texture and detailing.</p> <p>Note that any new mortar should always be softer, in terms of compressive strength, and more porous than the brick masonry.</p>

3.1.4 Cleaning of Brickwork

The cleaning of brickwork is usually undertaken for aesthetic reasons only. Before a decision to clean is taken, careful research and a full assessment of the likely outcomes should be carried out. Over-aggressive cleaning methods may damage or remove the protective fireskin from the bricks.

CLEANING TRIALS: should the decision be taken to clean the brickwork, a cleaning trial should be undertaken which will test the cleaning product and/or technique, and should be specified, recorded and supervised: 'before and after' photographs and all critical technical data should be accurately recorded; the trial should be undertaken on an area of brickwork truly representative of typical conditions, with enrichments and openings; the sample area should generally not be located on a prominent area of the building. The cleaning trial is part of a detailed specification – this will encompass preparation, protection of property, materials, equipment, and techniques. It will also specify methods of work for operatives, surface repairs and treatments, and overall time costing.

CLEANING METHODS:

A). WATER: considering the light staining of the brickwork generally, cleaning with water will probably be the most efficient and effective method. Clean, potable water is applied using a fine, nebulous spray to create a mist against the surface of the soiled masonry; jets of water are unnecessary and should not be used as they can saturate the fabric and find entry points into the building. To be successful, and not cause damage to the building and its brickwork, it is essential that the minimum amount of water is used. Soft, compact bristle brushes similar to nail or stencil brushes should be used.

Before washing historic masonry, all the points where water can penetrate must be temporarily sealed, and adequate drainage provided to cope with the run-off of the excess water. Sealing open-joints can be achieved by the use of twists of waxed string or mastic beads: after cleaning, these are carefully stripped-out before repointing. On large facades, intermediate catchments for water run-off should be provided to avoid saturation of lower zones of brickwork.

B). STEAM CLEANING: becoming more popular, and can prove useful in removing algae, bitumen and modern paints and coatings.

3.2 Render & Plaster Mouldings

3.2.1 Identification of Problems - photographs



photo 4
Cracking to plaster finish – northwest elevation



photos 5 & 6
Typical condition of plaster moulding – poorly maintained, significant cracking & frequently covered with layers of signage bills

3.2 Render & Plaster Mouldings

3.2.1 Identification of Problems - photographs



photo 7
Base of column plinth damaged; resultant decay of structure evident



Photo 8
significant cracking to the cornice of the entablature;
general poor maintenance and a lack of cleaning evident

3.2 Render & Plaster Mouldings

3.2.1 Identification of Problems - photographs



Photo 9

Underside of entablature to entrance portico: render missing, with resultant suspected rusting of steel beams: these will require to be checked by a structural engineer

3.2.1	<p>Identification of Problems</p> <p>The majority of Publicity is finished in a smooth render with painted finish (all rear, vernacular-style structures), with unpainted moulded plaster finish to the front, classical-style structure. The evident damage to the render and plaster appears to be mostly superficial, and the result of a lack of regular maintenance, a lack of cleaning, and generally a consequence of its age: cracks are evident as typically susceptible locations.</p> <p>However, prior to any repairs or cleaning being undertaken, all areas must be checked to ensure that there is sufficient allowance for quick removal of rainwater from the buildings' fabric.</p>
3.2.2	<p>Repairs to Renders</p> <p>Only problem areas where plaster is loose and defective need to be redone: the retention of sound work is important for its authenticity and historical value.</p> <p>New render must never be stronger than the background to which it is applied; successive coats must not be thicker or stronger than previous ones. The background and each subsequent coat must be pre-dampened before applying the next, to avoid suction, and coats must not be overly thick. Carrying out work during overdry, windy or very sunny periods should be avoided.</p> <p>PROCEDURE:</p> <p>Cut out defective work to a regular edge, slightly undercutting the top and sides. Ensure an adequate key by raking out joints, scoring background etc.; a mechanical key is more desirable than the use of binding agents, such as PVA. The number of coats applied should ensure that the face of finished work comes flush with that existing: three coat work is usual, with the overall thickness of the render usually being a minimum of 25mm. The first coat is applied to a thickness of 9 – 16mm and combed to give a key for the next coat; remaining coats can be from 6 – 10mm thick.</p> <p>The final coat should be finished with a wooden float and not overworked.</p>

3.3 Timber Windows

3.3.1 Identification of Problems - photographs



photo 10

Very poor decorative condition of first floor windows – probable decay of susceptible sections of sashes will need repairs

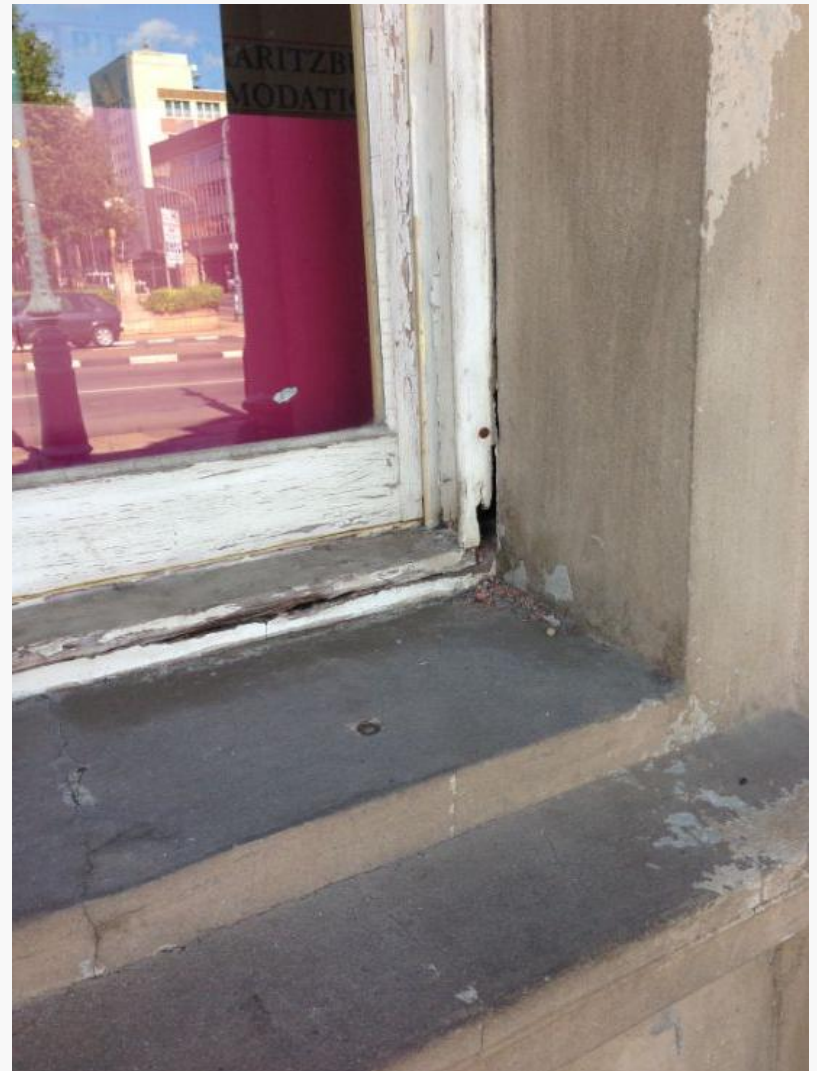


photo 11

Decay of frames – repair works required

Note: cracking of paintwork may suggest presence of lead paint – utmost care to be exercised in its removal/cleaning

3.3 Timber Windows

3.3.1 Identification of Problems - photographs



photo 12

Insensitive insertion of air-con unit within the sash, with resultant damage to the window and adjacent render (1 further window similarly affected)

3.3.1	<p>Identification of Problems</p> <p>Before any remedial actions are undertaken, it is important to assess and determine the most likely causes of damage to the timber windows and frames, to ensure that the proper solutions are implemented, and that an appropriate maintenance plan can be put in place to minimise recurrence.</p> <p>The condition of the putty, paint, timber and ironmongery must be assessed; vulnerable areas where water gathers, such as the junction of timber and brick sills, and the lower joints and rails, must be tested. Presence of lead paint must be determined.</p>
3.3.2	<p>Maintenance of Timber Windows</p> <p>Window Maintenance consists of keeping, or making, a window weathertight and functioning efficiently by ensuring that the paint, timber, putty, and ironmongery (hinges, catches & locks) are in good working order.</p> <p>Routine maintenance tasks of sash windows include:</p> <ol style="list-style-type: none">1. Balancing & Easing of Sashes2. Replacing Cords;3. Un-Twisting Weights;4. Replacing Parting or Staff Beads. <p>PAINTWORK</p> <p>Paint is a ‘sacrificial layer’: it’s function is to protect the timber from the elements until it wears thin, cracks or flakes. Paint generally has a life-span of three to seven years depending on its suitability for the purpose, its location and the environmental conditions. Flaking or peeling paint does not necessarily mean that the underlying timber is damaged, however it is a sign that paintwork needs to be renewed. Paint removal often raises health and safety issues, especially if dust will be created and most particularly if the existing paint contains lead.</p> <p>Historic paint layers should not be removed if the paintwork is in good condition: where historic glass remains in the window, a careful paint removal method should be utilised to avoid cracking or breaking; suitable methods are a hot-air gun with max. temp of 50-60° Celsius (used carefully by a trained expert only), or brushed with cold linseed oil.</p> <p>Paint must be properly applied to protect the timber for a given period of time, over sound timber or sound and clean existing coats of paint. It is best practice to remove the sashes from the frames for repainting and to allow the fresh paint to dry thoroughly before rehanging them.</p>

3.3.2 contd	<p>PUTTY Putty correctly applied and painted over within one month should continue to function as intended, and so long as paint coverage is maintained. Where putty is required to be replaced, it must be removed with care so as not to crack or break the glass, using infra-red or hot air gun (max. temp. 50-60° Celsius). Rebates to be cleaned out and coated with shellac or boiled linseed oil, prior to application of fresh traditional linseed oil putty. Freshly applied putty must be painted within one month (???)</p> <p>GLASS REPLACEMENT Historic glass should only be replaced where absolutely necessary. Where it is required to be replaced, 2mm or 3mm float glass is to be utilised (not the standard 4mm), as the thicker glass can weigh down the sash and can cause strain of the joints of delicate sashes.</p> <p>WINDOW FURNITURE All pulleys, hinges, latches and other fittings should be checked for workability: where found defective, they should be removed, gently cleaned and oiled, and re-fitted (except meeting rail catches, which should only be removed where absolutely necessary).</p>
3.3.3	<p>Repair of Timber Windows The integrity of the timber elements of the windows and frames should be tested with the use of a knife or awl – up to 3mm penetration is considered normal; 3-6mm demonstrates sound but ‘thirsty’ timber; more than 6mm demonstrates a problem, and further testing is required to determine the extent of damage. Typically, if there is very little give in the vulnerable lower corners, rails and sills, then the windows are basically in good condition.</p> <p>Where repairs are required, a similar timber should be utilised so as to ensure similar expansion rates; slow-grown timber should be used. Only the decayed timber and a minimum amount of sound timber beside the decay should be cut out, to obtain a strong spliced joint between the old and new timber. The new joint may be reinforced by pegging or screwing using brass screws fixed from the interior. The joint should be angled to throw water to the outside edge of the timber rather than let it creep inwards: the greater the angle, the stronger the repair.</p>

3.4 Roofs, Rainwater Goods & Cast-Iron Elements

3.4.1 Identification of Problems - photographs



photo 13

Corrugated iron roof finish throughout (note small section of flat-roof above): to rear buildings with exposed rainwater goods (in many cases the original cast-iron is replaced or missing).....



photo 14

.....the roof to the front block is concealed by a parapet, with no visible rainwater drops – concealed/internal downpipes.

3.4 Roofs, Rainwater Goods & Cast-Iron Elements

3.4.1 Identification of Problems - photographs



photo 15
Cast-iron canopy to northwest elevation – non-original gutter, downpipes missing, and damage evident



photo 16 above
Flat roof over entrance portico shows significant staining, suggesting poor rainwater management

Photos 17 & 18 right
Rainwater down pipe that should be serving the portico roof is missing, leading to damage to the surrounding render



3.4.1	<p>Identification of Problems in Roof & Rainwater Goods</p> <p>The corrugated iron roof sheets are to be checked for signs of decay, particularly at their exposed ends. These are generally not well maintained, with an inconsistent paint finish due to wear. The parapet gutters over the front section of building, along with the two areas of flat roof (entrance portico & north-west corner) were not accessible for inspection.</p>
3.4.2	<p>Repair of Roofs</p> <p>Only where there is significant decay of the corrugated iron should the sheets or parts of sheets be replaced. Replacement sheets or part sheet should match the existing in gauge and dimensions.</p> <p>The parapet gutters over the front section of building need to be carefully checked for signs of leaking (particularly evident from the interior).</p>
3.4.3	<p>Repair of Rainwater Goods & Cast-Iron Elements</p> <p>Gutters to the rear structures are generally in uPVC, having replaced the original cast-iron gutters. This are generally in poor condition. The rainwater downpipes are a mix of original cast-iron and uPVC replacements. There is significant flora growth in many locations, suggesting a lack of maintenance. Sections of uPVC guttering are missing.</p> <p>It is recommended that replacement cast-iron gutters and downpipes, matching those that are present, should be installed, due to their longevity and durability, when properly maintained.</p> <p>The front section of building has concealed/internal rainwater pipes – no internal inspection for signs of leaking has been undertaken to date; the flat roof over the entrance portico is designed to be drained via a single rainwater pipe, located to the left of the entrance door (viewed looking in) – this is missing entirely.</p> <p>It is recommended that a replacement cast-iron rainwater pipe, similar to those existing or as would have been utilised at the period of construction in such a prominent position, should be installed.</p> <p>CANOPY STRUCTURE to NORTHWEST ELEVATION</p> <p>PVC guttering is in poor condition, and rainwater down pipes are missing; general signs of poor maintenance. The cast-iron structure is generally in good condition, with just one element broken (but remaining insitu), that being in the bay closest to Chief Albert Luthuli Street. This break should be repaired by braze welding.</p> <p>It is recommended that replacement cast-iron gutters and downpipes, similar to those as would have been utilised at the period of construction, should be installed.</p>

4.1	<p>The Maintenance Plan</p> <p>Regular inspections will detect problems. If these are dealt with at an early stage, it will minimise the need for major and expensive repair work. As it is easy to forget to carry out routine maintenance tasks, it is useful to have a Maintenance Plan for the building, to remind the owner/manager of the building of the tasks that need to be done and the parts of the building that should be inspected. It will also help in the decision making process, to control maintenance costs, and to control what happens to the building, rather than simply reacting to faults as they arise: a Maintenance Plan can be used to plan short, medium and long term maintenance and repair programmes and to budget accordingly. The plan should be checked and updated every year to identify and document changes and potential problems.</p>
	<p><i>This section can be elaborated on, at a later date, to include the preparation of a Maintenance Plan</i></p>