

The Fernery at the Acacias, University of Reading		
February 2026		
Section 3 - Metalwork Repairs		
Item	Descriptions	Quantity
	<i>Two sets of winding mechanisms are present to operate the roof vents, one for north wing and one for east wing. All metalworks including cast iron brackets and ventilator machinery have been carefully dismantled for safety reasons and currently stored on site.</i> <i>The ventilator mechanisms are marked with the manufacturer's name 'Wm Wood & Son Ltd, Taplow, Bucks'. William Wood & Son were well-known horticultural suppliers who moved their premises to Taplow in 1924. The surviving machinery is therefore of historic significance and shall be retained and repaired as far as possible.</i> <i>The purpose of the works is to return the ventilating systems to full and safe operational order. All works shall be carried out by approved specialist metalwork contractor with demonstrable experience in the conservation and repair of Victorian glasshouse ventilating machinery and associated cast iron components.</i> <i>Works shall be undertaken in accordance with current best practice and relevant guidance issued by the National Heritage Ironwork Group.</i> <i>The overarching approach shall be one of minimum intervention, retaining the maximum amount of historic fabric and replacing elements only where they are demonstrably beyond reasonable repair or missing.</i>	
Ventilating Machinery		
3.01	Overhaul and repair 2 no. existing cast iron winches, both currently intact and stored on site, with one winch missing its threaded coupling. Works include - - Ease and adjust to working order - Clean back with wire brushes localised areas of rust (only use needle gun for thicker areas of corrosion / scaling that cannot be removed with wire brush) - Decorate with zinc primer and 2 coats of Sherwin-Williams Acrolon C237 Two Pack Acrylic Urethane Sheen finish or similar, to match existing. - Replace missing threaded coupling with salvaged, or allow for new mild steel one to be made. - Install on timber posts at a position that ensures proper functioning of the ventilator opening mechanism.	
3.02	Provide and fix 2 no. connecting vertical shafts between existing winch and ventilator arm at roof level. Shafts to be - - In mild steel primed and painted black to match existing - Formed with threaded ends to match existing. - Approx. 2linM long each (Contractor to verify dimsensions on site) The Contractor shall - - Take measuremens prior to manufacturing to ensure compactibility with existing ventilator opening system - Ensure correct alignment and engagement with all existing components - Prime measure on site to ensure compatible length with system to ensure proper functioning of the mechanism. Avoid any damage to existing historic components.	
3.03	Overhaul and repair 2 no. existing cast iron bell cranks, 1 no. intact with lever and arms, 1 no. with broken lever. Works include - - Ease and adjust to working order - Clean back with wire brushes localised areas of rust (only use needle gun for thicker areas of corrosion / scaling that cannot be removed with wire brush) - Decorate with zinc primer and 2 coats of Sherwin-Williams Acrolon C237 Two Pack Acrylic Urethane Sheen finish or similar, to match existing. - Braze broken lever arm assuming missing piece can be found on site. - Install on timber posts at a position that ensures proper functioning of the ventilator opening mechanism.	
3.03a	Allow for fabricating and bolting new steel arm if original piece cannot be located once leaf debris are cleared, with associated bolted joint to rod.	

3.04	Repair and reconnect 1 no. existing connecting rod between bell crank and vent shaft, to include - - Clean back with wire brushes localised areas of rust (only use needle gun for thicker areas of corrosion / scaling that cannot be removed with wire brush) - Decorate with zinc primer and 2 coats of Sherwin-Williams Acrolon C237 Two Pack Acrylic Urethane Sheen finish or similar, to match existing. - Reconnect and ensure correct alignment and engagement with all connecting components.	
3.04a	Provide and fix 1 no. connecting rod between bell crank and vent shaft, to replace missing component and match existing as per item 3.03. Rod to be - - In mild steel primed and painted black to match existing - Formed with threaded ends to match existing. - Approx. 0.8linM long each (Contractor to verify dimensions on site) The Contractor shall - - Take measurements prior to manufacturing to ensure compatibility with existing ventilator opening system - Ensure correct alignment and engagement with all existing components - Prime measure on site to ensure compatible length with system to ensure proper functioning of the mechanism. Avoid any damage to existing historic components.	
3.05	Overhaul and repair 2 no. existing main vent rods, running under all ventilators and connected to ventilator arms. 1 no. to north wing and 1 no. to south wing. Works include - - Controlled straightening of rods where slightly bowed using appropriate method to avoid kinking, cracking or otherwise weakening of material. - Clean back with wire brushes localised areas of rust (only use needle gun for thicker areas of corrosion / scaling that cannot be removed with wire brush) - Decorate with zinc primer and 2 coats of Sherwin-Williams Acrolon C237 Two Pack Acrylic Urethane Sheen finish or similar, to match existing.	
3.05a	Allow for replacing any broken, missing, or excessively corroded sections of existing main vent rods, in approx. 0.5linM. - In mild steel matching existing diameter - Formed with threaded ends to match existing - Join new sections to existing with threaded couplings to match existing pattern. - Prepared, primed and finished in black to match existing colour and sheen.	4 no.
3.05b	Install 2 no. main vent rods from item 3.05 along roof ridge, to pass through ridge brackets and mounting plate at hip end. Ensure accurate alignment and engagement with connecting members, and full, smooth operation of the ventilator mechanism, allow for adjustment following installation.	
3.06	Overhaul and reinstate 2 no. existing mounting plate to hip end, one to each set of ventilating mechanism. Works include - - Clean back with wire brushes localised areas of rust (only use needle gun for thicker areas of corrosion / scaling that cannot be removed with wire brush) - Decorate with zinc primer and 2 coats of Sherwin-Williams Acrolon C237 Two Pack Acrylic Urethane Sheen finish or similar, to match existing. - Reconnect and ensure correct alignment and engagement with all connecting components. - Install at correct position on principal rafter.	2 no.
3.07	Overhaul and reinstate 4 no. intact ridge brackets. Works include - - Clean back with wire brushes localised areas of rust (only use needle gun for thicker areas of corrosion / scaling that cannot be removed with wire brush) - Decorate with zinc primer and 2 coats of Sherwin-Williams Acrolon C237 Two Pack Acrylic Urethane Sheen finish or similar, to match existing. - Reconnect brackets to main vent rod, and fix to roof frame in original position. - Ensure correct alignment and full operation of ventilator mechanism.	4 no.

3.07a	Repair and reinstate 2 no. broken ridge brackets. Works include - - Stitch broken off fragement back to bracket, braze surface seams for better weathering protection. - Clean back with wire brushes localised areas of rust (only use needle gun for thicker areas of corrosion / scaling that cannot be removed with wire brush) - Decorate with zinc primer and 2 coats of Sherwin-Williams Acrolon C237 Two Pack Acrylic Urethane Sheen finish or similar, to match existing. - Reconnect brackets to main vent rod, and fix to roof frame in original position. - Ensure correct alignment and full operation of ventilator mechansim.	2 no.
3.07b	Allow for templating from existing bracket and replicate from mild steel new brackets to match existing. Primed and decorated to match existing colour and sheen. Install in position, ensuring correct alignment, secure fixing to the roof frame, and full operation of the ventilator mechanism. All dimensions to be verified on site prior to manufacturing.	2 no.
3.08	Overhaul and reinstate 5 no. existing eave brackets. Works include - - Clean back with wire brushes localised areas of rust (only use needle gun for thicker areas of corrosion / scaling that cannot be removed with wire brush) - Decorate with zinc primer and 2 coats of Sherwin-Williams Acrolon C237 Two Pack Acrylic Urethane Sheen finish or similar, to match existing. - Reconnect brackets to timber frame in original position.	5 no.
3.08a	Allow for templating from existing bracket and replicate from mild steel new brackets to match existing. Primed and decorated to match existing colour and sheen.	1 no.
3.09	Overhaul, repair and reinstate 8 no. ventilator arm assemblies. Currently only the curved crank links remain in situ; the straight ventilatoar arms connecting directly to the ventilator sashes are missing. Works include - - Ease, free off, and adjust to restore smooth mechanical operation. - Clean back with wire brushes localised areas of rust (only use needle gun for thicker areas of corrosion / scaling that cannot be removed with wire brush) - Decorate with zinc primer and 2 coats of Sherwin-Williams Acrolon C237 Two Pack Acrylic Urethane Sheen finish or similar, to match existing. - Supply and install new straight venitlator arms of correct length with connection fitting. Primed and decorated to match existing. - Reconnect to ventilator sashes, ensure correct alignment and engagement with the operating mechanism. Allow for adjustment to achieve full and coordinated operiation of the ventilator system.	8 no.
3.10	Overhaul and reinstate 1 no. existing counterweight to east wing. Works include - - Re-weigh and ensure correct mass appropriate for the correct operation of the ventilator system. Adjust weight as necessary to achieve correct counterbalancing. - Clean back with wire brushes localised areas of rust (only use needle gun for thicker areas of corrosion / scaling that cannot be removed with wire brush) - Decorate with zinc primer and 2 coats of Sherwin-Williams Acrolon C237 Two Pack Acrylic Urethane Sheen finish or similar, to match existing. - Reconnect and ensure correct alignment and engagement with all connecting components. - Install and ensure coreect functioning of system	1 no.
3.10a	Allow for providing and installing counterweight to the north wing ventilator mechanism, subject to confirmation of requirement following specialist contractor assessment. Works include - - Assessment of required mass - Manufacturing of weight in cast iron / mild steel. Form, size, and detailing to match existing counterweight in appearance and functional performance. - Installation and connection to the operating mechanism. - Testing and adjustment to ensure smooth operation of the ventilator system.	1 no.
<i>Rainwater Goods</i>		

3.21	Overhaul and reinstate existing eave gutter to east elevation, along with associated brackets. Works include - - Clean back with wire brushes localised areas of rust (only use needle gun for thicker areas of corrosion / scaling that cannot be removed with wire brush) - Decorate with zinc primer and 2 pack system, to match existing colour. - Reinstall in original position.	9linM
3.21a	Provide and fix new cast iron eaves gutter in Victorian ogee profile, 5" from J & JW Longbottom or similar approved. Paint white to match existing.	Approx. 25linM total to north, south and west elevations
3.22	Provide and fix new circular cast iron downpipes to replace existing uPVC ones, including all connections and elbows, 4" from from J & JW Longbottom or similar approved, with associated hopper. Paint white to match existing.	4 no.
3.23	Overhaul and reinstate hopper to south east corner, along with associated brackets. Works include - - Clean back with wire brushes localised areas of rust (only use needle gun for thicker areas of corrosion / scaling that cannot be removed with wire brush) - Decorate with zinc primer and 2 pack system, to match existing colour. - Reinstall in original position.	1 no.
3.23a	Provide and fix new ornamental hoppers to RWP 01 & RWP 03, to match existing to southeast corner (RWP 02), 4" from from J & JW Longbottom or similar approved. Paint white to match existing. (Contractor to check existing hopper dimensions to southeast corner, new hoppers to match existing)	2 no.