SPECIFICATION

Lauderdale House, Waterlow Park, Highgate Hill, N6 5HG

Lead Flat Roof Replacement & Cupola Works

for

London Borough of Camden

HardingBond
Ref: 1251RB
May 2017

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SECTION 1

SPECIFICATION
including
PRELIMINARIES
and
GENERAL CONDITIONS

	PRELIMINARIES AND GENERAL CONDITIONS	
Payment and Retention	Payment will be as follows:- After commencement of the work, the contractor can make an application to the Client for monthly payments which equate with work completed and/or materials purchased and on site less 5% retention. The Client will certify payments and agrees to pay any certified requests within fourteen days of certification. On 'practical completion', which shall be certified by the Client, the contractor should apply for a penultimate payment amounting to 97.5% of the final agreed account. The remaining 2.5% retention will be certified at the end of the Rectification Period after any reasonable defects have been rectified to the satisfaction of the Client.	
Rectification Period	The rectification period shall be six months from 'practical completion'.	
Insurance	The contractor must produce all relevant certificates of insurance for inspection by the client prior to commencing the works including public liability and employer liability certificates. The contractor is to insure 'the works' and the client will continue to insure 'the building'. The contractor shall have a minimum of £5 million public liability insurance.	
Disputes	Any disputes shall be referred to an independent surveyor appointed by the President of the Royal Institution of Chartered Surveyors (RICS), who shall act as arbitrator and who's costs shall be borne jointly by the parties.	
Construction Design and Management Regulations (CDM)	The Construction Stage of this project will not need to be notified and as such will not need to comply with these regulations, however all health and safety legislation will be complied with as follows.	
Health & Safety	The following Health and Safety matters must be observed: The Health and Safety at Work Act 1974, the Management of Health and Safety at Work Regulations 1999, the Work at Height Regulations 2005 and all other relevant Health and Safety Regulations.	

	PRELIMINARIES AND GENERAL CONDITIONS	
Security	All areas are to be left secure at the end of each working day. Ladders and “hop ups” must be removed from site each day or made secure with heavy chains and padlocks.	
Occupation / Side Wide Elements	The properties will be not be occupied at the time of the works and close liaison will be required with the employer and the occupiers. The contractor will be required to provide a programme as part of their tender return and if instructed they will need to display their programme during the course of the work.	
Facilities/Services	Water taps will be identified to the contractor and are available for free use for the contractors. Electricity will be available for the contractors use, locations will be identified by the client.	
Workmanship and Materials	All workmanship and materials shall be to the relevant and most recent British Standard and/or Codes of Practice and the Building Regulations. The contractor shall only use suitably trained and skilled operatives.	
Materials and Samples	The materials specified must be strictly adhered to, and the manufacturer’s recommendations must be observed. Any alternative materials proposed by the contractor shall be first approved by the Client who may first require samples to be provided.	
Plant and Protection	The contract shall supply all necessary protection including matts for cherry pickers, tools, equipment, labour and materials for the proper execution of the works.	
Supply and Fix	All items described in this specification are to be supplied and fixed complete.	
Programme	The contractor will commence the work as soon as possible and complete the contract and associated works as soon as possible. The contractor will be required, on acceptance of the tender, to provide a programme of the works.	
Working Hours	Working hours will be Mondays to Friday from 8am to 5pm. Work at weekends or public holidays is not permitted unless prior approval has been given by the Client in writing.	

	PRELIMINARIES AND GENERAL CONDITIONS	
Smoking/Radios	Smoking is not permitted in the work areas. Radios are not to be used on site.	
Site Clean	The contractor will be required to clean down the site at the end of each working day.	
Waste Disposal	Contractors are responsible for removing all waste/rubbish from site. If a skip is to be used then the location for it to be placed is to be agreed with the client. The contractor will be responsible for obtaining the necessary licences and for paying the associated fees. No burning is permitted on site.	

SECTION 3

SCHEDULES OF WORK

	Description	Cost
2.00.00	**General Description**	
2.00.01	Project comprises of the renovation of Lauderdale House which includes the removal and replacement of the lead flat roof and overhaul the cupola.	
2.00.02	The Contractor is to note that Lauderdale House consists of ground, first and second floors, with work restricted to the ground floor and first floor, internally and externally.	
2.00.03	The contractor is to note that roofing works will need edge protection, a safe working platform and a temporary roof as required under 3.03.00 and a temporary scaffold roof.	
2.00.04	All provisional sums, provisional quantities and PC sums are only to be expended under the direction of the Contract Administrator.	
2.00.05	No claim shall be considered which results from lack of knowledge and discrepancy from information reasonably obtained from on-site investigations.	
2.00.06	The Contractor is to price for an adequate number of skips for the removal of waste.	
2.00.07	Each item in this schedules of work is to be priced **separately**.	
2.00.08	The Contractor shall include for work shown or described in the Contract Documents as a whole, apparent or implied as being necessary for the complete and proper execution of the works whether specifically stated in the Specification or not.	
2.00.09	The Contractor is to note that the property will be occupied during the course of the work. All tools must be locked away and the site area secured at the end of each working day.	
2.00.10	The Contractor is to allow here for instructing an Asbestos Surveying Company to complete a refurbishment/demolition survey to the areas that the works are to be carried out, a copy of the report is to be issued to the CA.	
2.00.11	The Contractor is to allow here a **Provisional Sum of £1,000** for the removal of any asbestos found as a result of the Survey	**1,000**
2.01.00	**Working at Height**	
2.01.01	Where work necessitates working from height, i.e. off floor joist, ceiling joist, rafters, etc, then the area immediately below is to receive air bags or similar means of fall arrest.	

	Description	Cost
2.01.02	The use of ladders is to be discouraged due to their associated risks and all works from height were they exceed 2metres must be executed off the scaffold.	
2.02.00	**Programme for Work**	
2.02.01	The Schedules of Work have been arranged in a sequence believed to provide a sensible programme. However, HardingBond Property Consultants is in no way suggesting the Contractor adopt this sequence and it will be the responsibility of the Contractor to execute the works in a sequence best suited to them.	
2.03.00	**Scaffold**	
2.03.01	The new scaffold is to be designed to provide a temporary roof, safe working platform and edge protection for the roof work and fascia works.	
2.03.02	The scaffold is to be designed and erected in accordance with NASC Guide to EN12811:2001.	
2.03.03	Under no circumstances will it be permitted for the scaffold to be altered by anyone other than a competent person.	
2.03.04	The scaffold is to be checked weekly or after inclement weather or alteration by a competent person and the completed report kept on site.	
2.03.05	Under no circumstances will dropping of material, scaffold tubes, boards etc be permitted unless it is carried out in a controlled manner e.g. materials through a chute to a skip, scaffolding items are to be passed to other operatives and the area below will need to be isolated.	
2.03.06	The scaffold is to be a minimum of three boards wide and sited on level and firm ground with base and sole plates where necessary. Each scaffold board on a working platform must have at least three supports and each support must not exceed 1.5 metres. These must either be tied down or overhang each end support by at least 50mm but not more than 150mm.	
2.03.07	Vertical supports will not be more than 2 metres to 2.5 metres apart and braced diagonally along and at right angles to its length.	
2.03.08	The scaffold will need to be tied into the building every 4 metres vertically and 6 metres horizontally.	
2.03.09	The exposed edges will be guarded from 2 metres and above with toe boards a minimum 150mm high. The next guard positioned 750mm above the toe board and, again, 1 metre above the platform. Each ladder must be secured before climbing and rise a minimum of 1070mm above the working platform.	

	Description	Cost
2.04.00	**Internal Crash Deck**	
2.04.01	Allow here to supply and construct new tunnel crash deck commencing from the staircase to the extent of the existing lead flat roof for the protection of the public staff and finishes to the first floor corridor as follows:	
2.04.02	Line floor with 1200 gauge polythene dpm and then create floor, stud walls and roof using 50x100 C16 timbers at 400mm centres Carcass the public side with 18mm ply. Trim studs around windows to allow natural lighting.	
2.04.03	Allow here to supply and fix LED festoon lighting to the tunnel fixed to the ceiling	
2.05.00	**Strip Out**	
2.05.01	The contractor is to allow here to remove to the skip the existing lead roof covering, inclusive of upstands, cupola surround, cover flashings, fascia and substrate	
2.05.02	The Contractor is to allow here a **Provisional Sum of £750** for the replacement of the cupola timbers	**750**
2.05.03	The Contractor is the allow here **a Provisional sum of £1,250** for the replacement of rotten flat roof joists found as a result of the roof removal	**1,250**
2.05.04	The Contractor is to allow here to strip off for the purposes of this tender the first three courses of tiles to facilitate the new lead roof and set the tiles aside for reuse.	
2.05.05	The Contractor is to allow here **a Provisional sum of £750** for the splicing in of new rafters where the originals found to be rotten	**750**
2.06.00	**Lead Flat Roof**	
2.06.01	The Contractor is to allow here to supply and install a new ventilated warm deck code 5 lead flat roof as follows:	
2.06.02	The roof will need to be divided up into bays of no more than 600mm wide by 200mm long and joined using wood cored rolls as recommended by the Lead Sheet Association, with fixings to the higher stage limited to the first third of the core at 50mm centres and then the undercook of the wood.	
2.06.03	Undercloak of the top of the second bay at 50mm centres and first third of the undercook to the wood core at 150mm centres.	

	Description	Cost
2.06.04	Roof to be made up as follows: 18mm sheeting ply vapour control layer, kingspan 120mm thick thermaroof TR27 CPC/F insulation set between 50x120 C16 joists at 400mm centres, breather membrane 50x50mm C16 battens placed onto joists 18mm sheeting ply, building paper and lead roof as above. Supply and install new firring pieces falling toward the free edge at a fall of 10 degrees Supply and lay new 18mm sheathing plywood to the existing rafters of the clay tiles roofs. Ensure a 25mm air gap is provided for the new roof and into the existing pitched roof. Supply and install new 45mm tilting fillet to the junction of the wall, and previously specified upstand.	
2.06.05	Allow here to supply and fix new Hardwood fascia board in a size to match the existing and for the purpose of this tender allow Fin 25x150mm and decorate as follows: - Apply 2 no. coats of Shellac to all resinous areas. - Fill all indentations, holes, etc. Allow to cure and rub down to a smooth surface. - Prime all surfaces to be glossed using Dulux primer especially end grains. - Ensure all surfaces are dry and rub down with a fine abrasive paper until smooth. All subsequent dust to be removed prior to application of top coats. - Apply 2 no. coats of Dulux gloss paint.	
2.06.05	Allow here to supply and install new Nicholson Airtrack IL180 Inline Ventilator (t: 0845 0098 980) or similar approved to the junction of the existing clay tiles roof and the plywood upstand. Ensure that the distance from new lead finish to underside of the ventilator profile is 75mm.	
2.06.06	Allow here to supply and install new Nicholson EA100 Eaves Ventilator (t: 0845 0098 980) or similar approved to the junction of the new flat roof and eaves	
2.07.00	**Cupola**	
2.07.01	Allow here reline the cupola upland with Code 5 Lead warm deck wood cored roll, abutting wood cored roll hip as follows:	

	Description	Cost
2.07.02	New cupola roof to be detailed a the main roof with new ventilator immediately below glazed roof sill by Nicholson AirtrackBRV 2 between roll Ventilator, type 2 or similar approved. Ensure that the cupola roof cladding dresses over the flat roof by a minimum of 150mm	
2.07.03	**The Contractor is to allow here to instruct Kenton Brauer (Tel: 01508 820141) to complete the works which can be found at appendix 3**	
2.08.00	**Flashings**	
2.08.01	Allow here to supply and fix new code 5 lead cover flashing at the junction of the roof and upper stone wall. Lead to be let into a 25x25mm chase, lead wedged and pointed with the previously specified lime mortar. Lead lengths not to exceed 1500mm and be lapped by 100mm. Lead upstand to be min 150mm.	
2.08.02	Allow here to renew the existing chimney back gutter with a code 5 lead welded back gutter.	
2.09.00	**Pitched Roof Junction**	
2.09.01	Where tiles stripped back to accommodate the new roof covering the tiles re to be in part reinstated; for the purposes of this tender allow new tiling batten and reinstate the salvaged tile, two complete courses.	
2.10.00	**Gutters**	
2.10.01	Allow here to replace the existing PVC u gutter with new cast Iron Ogee Gutter and decorate using a	
2.11.00	**Leave Clean and Completion**	
2.11.01	Allow here to dismantle and remove to the skip the tunnel crash protection	
2.12.02	Allow here to overboard the existing plasterbroad ceiling within the first floor corridor, tape, joint and seal and decorate as follows:	
2.12.03	Allow here to complete a mist coat to all surfaces to seal plasterboard and fill any surface imperfections.	
2.12.04	Allow here to apply 2 coats of emulsion to the walls, ceiling	
2.12.05	Allow here to remove all builders material, debris, waste, litter and to provide a clear site ready for a clean.	
2.12.06	Allow here to clean down the roof and jet wash rain water goods, leaving them in full working order.	

	Description	Cost
2.13.00	**Contingency**	
2.13.01	Allow here a **contingency of £10,000** for unforeseen circumstances. This will only be spent under the direct instruction of the Contract Administrator.	**10,000**

SECTION 4

COLLECTION SHEET

(to be returned by contractor with quotation)

	COLLECTION SHEET (to be returned by contractor with quotation)	£
2.00.00	**General Description**	
2.00.12	The Contractor is to allow here a **Provisional Sum of £1,000** for the removal of any asbestos found as a result of the Survey.	**1000**
2.01.00	**Working at Height**	
2.02.00	**Programme for Work**	
2.03.00	**Scaffold**	
2.04.00	**Internal Crash Deck**	
2.05.00	**Strip Out**	
2.05.02	The Contractor is to allow here a **Provisional Sum of £750** for the replacement of the cupola timbers	**750**
2.05.03	The Contractor is the allow here **a Provisional sum of £1,250** for the replacement of rotten flat roof joists found as a result of the roof removal	**1,250**
2.05.05	The Contractor is to allow here **a Provisional sum of £750** for the splicing in of new rafters where the originals found to be rotten	**750**
2.06.00	**Lead Flat Roof**	
2.07.00	**Cupola**	
2.08.00	**Flashings**	
2.09.00	**Pitched Roof Junction**	
2.10.00	**Gutters**	
2.11.00	**Leave Clean and Completion**	
3.12.00	**Contingency**	
3.46.01	**Contingency Sum of £10,000** for unforeseen circumstances. This will only be spent under the Contract Administrators direct instruction.	**10000**
	Total	

SECTION 5

FORM OF TENDER

TENDER FOR: **ROOF WORKS**
at Lauderdale House for
HARDINGBOND PROPERTY CONSULTANTS

To Mr Ronan Bond
HardingBond Property Consultants
7 Cambridge Road
Hastings
East Sussex TN34 1DJ

We, having read the Conditions of Contract, Specification and Schedule of Works delivered to us, do hereby offer to execute and complete in accordance with the conditions of contract the whole of the works described for the sum of:

(£.....) and within 10 weeks from the Date of Possession. Our tender figure includes the contingency sum of **£10,000 [Ten Thousand Pounds] excluding VAT.**

We agree that should obvious errors in pricing or errors in arithmetic be discovered before acceptance of this offer in the priced Specification submitted by us these errors will be dealt with in accordance with Alternative 2 contained in Section 6 of the 'Code of Practice for Single Stage Selective Tendering'.

We undertake in the event of your acceptance to enter into a form of contract embodying all the conditions and terms contained in this offer.

We confirm that the work will be carried out on dates to be agreed with the client.

This tender remains open for consideration for 13 weeks from the date fixed for the submission of tenders.

Dated this ..... day of 2018

Name .....

Address .....

.....

Signed .....

APPENDIX 1

DRAWINGS

Kenton Brauer
Stained Glass & Casements

Park House, Shelton, Norfolk
01508 820141

kentonbrauer@gmail.com
kentonbrauer.com

Lauderdale House, Highgate, London Cupola Report
Site Survey & Scheme of Works Conducted on Tuesday 6th June 2017

Lauderdale House was originally built in 1582. We understand the cupola situated above the upper Gallery is Georgian. It would of been installed between 1714 and 1830 either to an original part of the building or as part of a new extension at that time. The top section steel frame of the cupola may not be the original and could have been replaced, due to corrosion, with new additions added such as the laminated safety glass. It's probable that the outside was also decorated similar to the inside of the vertical side sections but lead roofing now covers this area, again a modern addition for water ingress protection.

Preliminaries

Before works start on the Cupola we recommend repositioning the newly installed fire alarm sensor which has been placed at the very top point on the inside of the cupola. And for all truncking and cables to the fire alarm sensor should be removed, repositioned and made electrically safe by a qualified person.

The Existing Cupola

Steel Frame – This is made up of steel "**+**" and "**T**" profile steel sections which are in poor condition with heavy corrosion and pitting in areas due to many years of weathering. With it being a ferrous metal, any attempt to

restore this will again in future cause problems with corrosion, leaking and continued maintenance. On measuring sections of the steel openings, it was also clear that it's not symmetrical and all glazed sections are different sizes, which is also noticeable to the eye looking from below.

Glazing – The top sections of glass are laminated with a very poor rough edged finish. These do not overhang enough due to the sloping steel sections being too short that hold the glass in place, causing any water run off to not clear properly. See Fig1
The glass to the side sections are likely to be standard annealed glass as they don't appear to be very thick. This could potentially be a hazard if broken as these can break into large sections. The other give away is that the whole cupola has been painted in a clear plastic paint know as a shatterproof paint. We believe this was also put on in an attempt to seal up any leaks as it's been applied over the above laminated glass where it's not necessary. This paint also causes a lose of clarity to the glass.

Glass Fixing – The glazing would have been fitted with a traditional linseed oil putty. The bottom glazing is putted with many layers of paint applied on top but the above glazing has been bedded in with a clear silicone which is very unsightly and incorrect. Also, the steel section that holds the top glazing in place is of an insufficient sized profile to take the thick laminated glass as there is limited room to apply a good sized bead of putty. See Fig2
The top glazed sections are also held back by safety clips incase the putty fails which prevents the glass slipping away. These are made of lead and are very weak and insufficient. See Fig3

Ventilation – There is a slight gap between the top of the bottom glazing frame and the underside of the top glazing all the way around, but this has been sealed up with silicone all the way around probably in an attempt to stop any leaks. This should act like a trickle vent that you get in modern day windows. A Trickle Vent does exactly that and allows air to trickle into an area at a reasonable rate so that you will not feel a cold draught, keeping condensation at bay and giving you a balanced environment all year round. The gap also provides an escape route outside for any moisture that could potentially built up on the underside of the top glazing. See Fig4
There is a leaded cap on the very top point of the cupola which is for weather proofing and also ventilation. The removal and further inspection of this when work starts will provide evidence to see if it is sufficient enough for ventilation. See Fig5

Base – The steel cupola frame appears to be screwed down on to its base. These are most likely to corroded if ferrous steel screws have been used. The

weatherproofing and sealing around the outside seems to be inadequate as the lead sheeting appears to just butt up to the steel frame. This was difficult to see due to paint treatments to the lead and steel. See Fig6

Recommended Improvements

Cupola

A) **Frame –** Remake the frame copying the design of the existing but if possible making it symmetrical if the footprint of the base it fits on to allows. Extend the sloping steel profiles in which the top glazing sits into allowing the water run off to completely clear the cupola below. Use a larger steel profile on the sloping glazing and side glazing to allow a correct sized bead of fixing sealant to the glass and steel on the outside. We also recommend fitting a fully welded cill or skirt all the way around the bottom of the frame to clear the lead cill it now sits on. This will eliminate sealing problems and all water run off would go straight to the roof floor.

B) **Material –** The frame should be re manufactured in stainless steel using just a "**T**" profile section and not the existing "**+**" used around the glazing. This would of been used for strength purposes and as we suggest using stainless steel which stronger than mild steel there would be no need. This will simplify the structure and be more pleasing to the eye from the inside. The cost will be greater using stainless steel to a mild steel but the frame is not of a considerable size in all so it would be more cost affective. Using stainless steel means it will be maintenance free and corrosion free thus keeping future maintenance costs down. There are two commonly used grades of stainless steel, 304 and 316. 304 grade is stronger than the 316 grade due to its higher carbon content. The 316 grade is mainly used in the marina industry or for applications used close to the coast. We suggest the 304 grade to be sufficient and is also a cheaper option to the other.

C) **Finish –** We recommend a powder coating finish once the frame has been manufactured. This process is environmentally friendly and cost effective. It applies thicker than a standard paint with a high quality finish and it's also very tough and resistant to impact, chemicals, UV light, moisture and extreme weather conditions. It will last a very very long time along with stainless steel and will reduce the maintenance

costs dramatically. This can be applied in almost any colour but as the existing frame is white and the internal decoration is white we would suggest keeping it white for visual purposes.

D) **Glazing –** We recommend fully glazing the cupola in a laminated safety glass. This glass consists of two pieces of glass laminated together with a very tough and durable plastic.
When broken it will still remain integral due to the plastic between the glass, remaining safe even when broken. Although it will break or crack easier than toughened glass, it has a better security aspect as a much greater force is needed to break the plastic.
The other option would be toughened glass, the is around 8 times stronger than your standard glass but it will still shatter and fall if hit hard enough by an object or a person. Furthermore, each piece has to be made to order in a mold as it cannot be cut by hand. Laminated safety glass can be cut by hand to order and the edges can be polished smooth.
There are three types of laminated safety glass, the first being the standard clear. The next is an acoustic type which will considerably reduce noise from the outside and the latter is a toughened type. With the Toughening process and the Laminating process together this will provide a barrier which is very hard to penetrate. If one of the toughened glass panes does happen to break not only will there be no falling glass particles but the additional toughened glass pane and the interlayer will provide an extra barrier to prevent injury. This is a huge advantage when glass is being used for balustrades, flooring, canopies etc. where safety is paramount. The interlayer used when laminating the glass gives an extremely high transparency, durability and long-term reliability. It can be used indoors or outdoors as it is fully water proof therefore making it the perfect product for canopies and balcony balustrades that are exposed to the weather.

E) **Glass fixing –** We recommend using a new type of sealant called “Dry Seal.” This is ideal as a permanently elastic and paintable alternative to linseed oil putty and is for new glazing applications, renovation and restoration. It’s a permanent replacement for putty in steel frames and it’s made for external and internal applications. Fully cured after 2 hours and compatible with double-glazed sealed units, laminated & acoustic glass. It is moisture and UV-resistant with excellent adhesion to glass and steel. It is also available in white so no painting would be required if the frame was to be finished in white.
We recommend the top glazing hold back clips to be made out of stainless steel also by who ever manufactures the frame and also powered coated white. Otherwise, these could be made from copper or

brass but they will dis-colour over time and can cause staining on anything below.

F) **Ventilation –** The frame should be manufactured in the same way as the existing leaving a small gap, a so called trickle vent as written above in the existing ventilation section. This should not be sealed up. This gap also provides access to the anchor point for the hold back clips to the glazing above. With regards to the cupola weather cap and further inspection, it maybe possible to either use the existing cap or remake another out of lead as the existing does not look very well made. There is also the possibility of having something completely bespoke manufactured in a different material, but still making sure weatherproofing and ventilation is key.

G) **Base –** Assuming the base in which the frame sits on is to be renewed, we would just recommend again screwing it down but using substantial stainless steel screws at more points, maybe three to four fixings on each side. The frame can also be bedded down onto a bead of the "Dry Seal" as written above, which has great permanent water proofing and fixing properties to timber as its also made for wooden window frames.

Any roofing materials used can now be finished underneath the stainless steel cill or skirt all around the bottom of the cupola frame, eliminating any worrying joints and making it completely watertight.

Schedule of Works for the Removal of the Existing Cupola Frame

- Visit site and make safe below the cupola for any possible falling objects.
- Ensure all works have been carried out for the removal of the fire alarm sensor.
- Remove the weather cap and all glazing from the steel cupola.
- Remove all fixings to the cupola frame.
- Remove from its position and safely move and lower to ground level outside to the agreed route and means by the site manager.
- Measure and template the base (for possible symmetrical frame remake)
- Clean and clear the work area.
- Inform the site manager of works progress so they are able to make the opening weather tight and safe.
- Clear all scrap glass and waste material from site along with the cupola frame for a template and guide.

Schedule of Works for the New Cupola Frame & Glazing

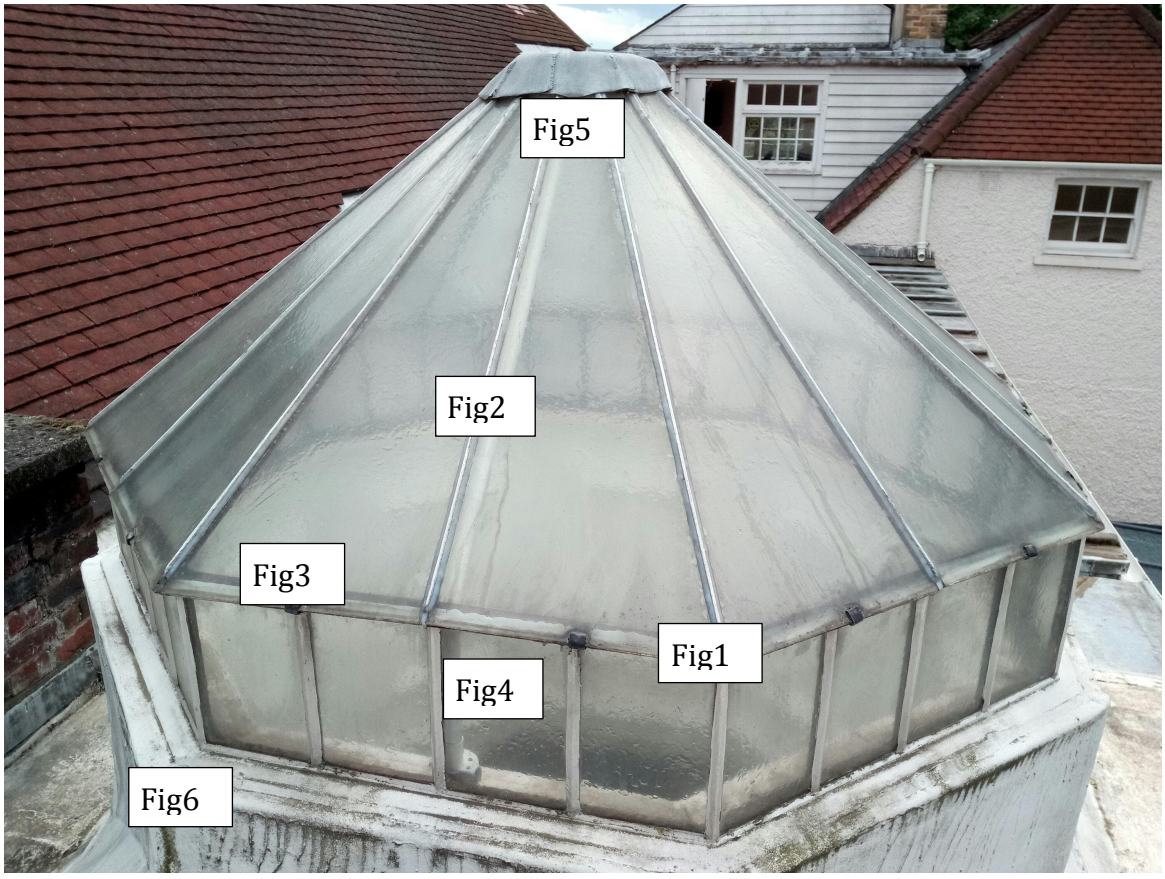
- The contractor either fabricates the frame them selves if they have the facilities or subcontracts the frame out to be manufactured to the above specification if agreed.

- Once the cupola frame and clips are complete they will need to be powder coated to the agreed colour.
- Protect from damage for transportation once coating is complete.
- Template all glazing openings for glass supplies to cut and finish to the agreed type of glazing to be used ensuring each opening is numbered to match the correct piece of glazing.
- Check all glazing fits into its correct opening.
- If required, manufacture or sub contact a new weather cap to agreed specification.
- We would not recommend glazing any of the cupola until it is in it's final fixed position. Even glazing the lower smaller sections first could make the fixing down of the cupola awkward. Also the weight will increase and make moving it around site more difficult.
- Protect the cupola and glazing from damage for transportation to site and the moving into position.

Schedule of Works for the Fitting & Glazing to the New Cupola Frame

- Make the site manager aware of your return so they can prepare for the removal of the weather protection to the cupola position and that all works have been completed and prepared for the fitting of the cupola.
- Visit site and make safe below the cupola for any possible falling objects.
- Inspect the base to ensure it is satisfactory and all parties are happy.
- Move the cupola frame and glazing safely to the roof to the agreed route and means by the site manager.
- Carefully remove the protective packaging.
- Lift the cupola onto its base to ensure its correct position. Once achieved mark a line all around the inside of the cupola base and pilot drill all fixing holes.
- Lift off the cupola maintaining the correct orientation.
- Put down a heavy bead of the "Dry Seal" following the drawn line.
- Lift into position again ensuring the same orientation and screw down with the agreed stainless steel fixings with an impact screw driver.
- Clean off any dry seal excess to the inside of the frame base.
- Start glazing from the top first bedding in the glass with the dry seal and cleaning off any excess to the inside of the glazing. Fit the hold back clips and then completing each section with a good bead of dry seal traditionally angled against the steel frame and glass. Clean off any excess, finger marks and smears as the sealant will cure in approximately two hours and could make any excess removal difficult after that time.
- Fit and secure the agreed weather and ventilation cap.
- Fit the lower glazing sections following the same steps as above.
- If the cupola frame is not to be finished in a white coating the dry seal will need to painted to match the cupola frame colour. This can easily achieved roughly two hours after application of the dry seal.
- Clean the cupola frame and glazing inside and out.
- Clean and clear site of all waste materials.

Recent photo of Cupola during visit. See for Figure codes.



Please see pictures below for interest: