

Advice When Specifying Ironwork

If you have an ironwork project and need to prepare a specification for tender, we would always recommend having a detailed assessment of the required works first. We are often employed to survey prospective projects and can prepare reports, drawings and full specifications. This will give detailed, quantified requirements and allow competitive tender pricing.

(A little moan) We very often see the same generic specification terms used when tendering for ironwork projects and wonder if the high specifications asked for are often truly required. Sometimes we have lost work on price only to see it completed by others in a much simplified way, without the high specification as originally stated. This can be frustrating.

Some important points to consider when writing a specification are detailed below:

Materials

The materials required for the works must be clearly decided upon. In the past we have received a B of Qs which have asked for gates to be made from “cast wrought steelwork”. This is obviously a contradictory specification and allows great variation in price. The term ‘wrought Iron’ to us is a description of the material, however it is commonly used to describe any decorative metalwork (usually mild steel) that appears to have been forged. ‘Wrought steel’ or ‘forged steel’ would be the method of forging steel in the traditional manner. Wrought Iron as a material is extremely expensive and now mainly used in the repair or reproduction of historic pieces. Architects should be aware of the cost of the material and if specified ensure the correct grade is used. Steel is the material that modern Smiths most commonly forge today. Cast Iron is formed in an entirely different process, which will involve patterns to form the moulds. Cast Iron also has various grades with different properties, which will also have an impact on cost. Copper, bronze, brass and stainless steel can also be forged and are useful for their resistance to corrosion. Lead is easy to melt and form into decorative features, but it will not withstand impact or rough abrasion because it is so soft. It is used to fill unwanted holes in ironwork or caulk vertical bars through rails in gates or railings. Lead is also used to caulk the ironwork into stone or brick.

Method of Making

They say there are many ways to skin a Cat. Well there are also many ways to make a wrought Iron gate for instance. To us a true wrought iron gate is made of wrought iron material, forged and joined with traditional techniques. The methods used would employ rivets, collars, mortise and tenon joints, clips, screws, bolts and where applicable forge welds. A gate can be forged in steel by traditional ways and be virtually indistinguishable from a wrought Iron gate. This would be the most popular way we make today, eliminating the high cost of the wrought Iron material. It is also possible to forge a product and join it together by means of electric welding. This is also popular today because of the time saving and therefore the reduced cost to the customer. Architects and historic building advisors should be aware that it is possible to ‘cheat’ and pass this off as a traditional method. Forging and joining together with electric welding can be very successful and produce wonderful

effects but must not be confused as a traditional gate. Finally, there are many pre forged modular components available today to anyone. These can be simply welded together and called wrought ironwork. While they have their place, they can undermine the value of a true Blacksmith. Also there is a danger that ironwork is becoming generic and around the world we are seeing gates, railings etc. which all look the same. This is a great shame when there are so many talented individuals able to create something special and unique to a particular space.

Extent of repair

When pricing a B of Qs for a restoration project is vitally important to know the extent of repair required and therefore the amount of work to include. This can be sometimes difficult to assess unless a detailed survey has been undertaken and clear repair methods and quantities have been stated. The cost in repairing a gate can vary enormously from simply shot blasting and repainting to a full overhaul involving flame cleaning, repairing every broken part and meticulously hand painting.

Finishes

The most common finish for ironwork is paint, which can be applied in a multitude of ways. Our preferred method is to start with a clean base by shot blasting to SA2.5. The work is then painted with a blast primer, a second coat of anti corrosive primer and finally a top coat of a quality enamel paint. There are also polyester powder paints available which can give an enduring finish. These are applied then baked dry or melted on in an oven. This is often used on galvanized items after a mordant solution has been applied and allowed to dry. The problems sometimes associated with this paint are that it can flake or fracture. This means moisture can penetrate below and remain where it causes corrosion. This is sometimes undetected and difficult to cure. It also has a plastic look about it and not really suitable for historic Ironwork.

Galvanizing is a process where molten zinc is applied to bare metal and gives superb protection from corrosion. Whilst excellent when used on steel, this is never applied to cast iron and we never use it on wrought Iron. To cover this expensive material, which has its own resistance to corrosion, with a heavy coat of zinc would be a sin. Generally, we would not expect to galvanize traditionally forged items, even in steel, as it can hide and distort some of the unique features of forge work. Here, extra protection can be gained by applying zinc cold in a zinc rich paint or by hot zinc spraying. This involves melting the zinc with a propane gas flame as it is sprayed upon the shot blasted metal. It will also require a paint system above it.

Wax is a traditional way to protect metalwork it can be applied hot or cold to metal and prevents moisture from getting to the surface. It is good if you want to see the character of the metal but not generally used outdoors.

For a full range of information on finishes please follow this link.

Time to complete

It is often easy to underestimate the time taken to restore or make new Ironwork, especially if it is traditionally made with all the hand processes involved. As it tends to be the latter part of a major project before the metal work is installed, is often left until other works are well underway. We hate to be the cause of holding things up at the end of a

project, so love to be able to start as early as possible. Items that can hold up our work are typically patterns and casting, special glass and any items which we may have to sub-contract.

Enhancing property

Very often the metalwork we restore is of the finest quality and would have been initially installed to be the showpiece of a property. So it should be today. The gate you walk through, the staircase you climb, or the balcony you look over are areas where visitors will be in close contact with your building. A first impression can only be made once so we should consider the importance of providing quality ironwork to adorn our buildings. The ironwork we provide, if looked after properly, will last generations and will outperform low cost options if the longer view is taken. This is why we are used by large estates who are caring for properties for future generations, the longer term.