

# **The Management of Private Building Yards in Milan between 1550 and 1650: a History Reconstructed through Building and Supply Contracts**

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This paper deals with private building yards and the norms governing their management. About forty contracts have been discovered, and they involve objects that were symbols of the position of prestige and power that had been achieved by members of the socio-economic elite in Milan, that is to say, noble residences, family chapels and villas. However, the majority of these documents (about thirty in all) concerns the construction of urban noble residences, which were considered the most important of the tangible signs of a family's self-commemoration. The patrons who drew up these contracts were, in fact, members of houses belonging to the city's patricianship, like the Medici di Melegnano, the Cicogna, the Cusani, the Visconti and the Trivulzio families, or to the upper echelons of the commercial and/or financial middle class, like the Marino, the Spinola and the Aliverti families. They were all patrons who could, thanks to the social position they had achieved, the positions they held and the wealth they had accumulated, seek out the best architects and skilled workers available on the Milanese market. The architects who took part, albeit with different roles, in the Milanese building yards analysed here were: Galeazzo Alessi (1512-1572), Giovanni Ambrogio Alciati (?-1590), Vincenzo Seregno (1509-1594), Pellegrino Pellegrini (1527-1596), Martino Bassi (1542-1591), Giuseppe Meda (?-1599), Fabio Mangone (1587-1629) and Francesco Maria Richini (1583-1658). Relationships between patrons and architects, however, must have been governed by private agreements. In fact, no documents dealing with such matters have come to light. Relationships with skilled workers and suppliers, on the other hand, were endorsed by public contracts, and the forty analyzed here (drawn up with master-builders, master masons and stonemasons, stuccoists, wood carvers, suppliers) represent a sampling. Along with these contracts, other types of documents are taken into consideration, like acknowledgements of payment, often with lists of expenses, obligations and appraisals, and these have enabled us to have a clearer picture and shed light, as we will see, on work carried out by day rate.

## **SPECIAL CHARACTERISTICS OF PRIVATE BUILDING YARDS IN RESIDENTIAL URBAN CONSTRUCTION**

The self-celebratory role played by the urban residences of the highest classes entailed being "appropriate to the quality of those who will inhabit them" (Palladio 1570, libro secondo, p. 3), whether it regarded formal aspects or spaciousness. Possibilities for expanding buildings were inhibited by the high density of buildings and by the intense land parcelling of the oldest part of Milan, where all of the buildings in the period considered here were under construction. The law *In*

*favorem volentium laute ædificare* (Archivio di Stato, Milan, ASMi, *Registri Panigarola*, reg. 11, 17 July 1493, then resumed in the New Spanish Constitutions in force since 1 January 1542) was introduced for the precise purpose of making it easier for those who wanted to expand and upgrade their buildings. It introduced expropriation among private parties for public use in favour of whoever, to those aims, wanted to acquire property bordering on their own, but upon payment of a price one fourth higher than appraised. In the area of residential construction, patricians mainly resorted to this law (Giacomini 2002, pp. 32-3; Giacomini 2004, pp. 1-2) if they needed to group various property together in order to build a residence on a scale that, combined with its beauty, could meet the requirements of “private comfort and public elegance” (ASMi, *Registri Panigarola*, reg. 11, 17 July 1493).

At times, the campaigns for the aggregation of lots that were conducted in the cases examined here did not last more than a few years, but more often than not, they went on for decades. The new lots were clustered around the ancestral home of the family, or around a nucleus made up of a noble residence acquired in an urban area of great prestige in a time of the family’s economic expansion and/or social ascent. Frequently, the purchase of a building that was the centre of an aggregation and later acquisitions were due to members of the same family or even to different owners, but at times it was a case of a single individual who was forced to spread out purchases over time because of personal matters of a family or economic nature. The way of proceeding in constructing these buildings was closely linked to the special characteristics of the buying campaign, to the qualities of the property which came into their possession and to family matters and needs. The most widely used practice called for establishing a tight connection between the annexation of new parts and starting up new phases in the building yard. That is to say, a way of intervention by “stages of progress” was put into action (Romby 1982, p. 20), and it foresaw carrying out those changes which had been made possible by unifications that had been carried out, or vice versa, by the acquisition of parts that, as work gradually proceeded, became necessary. At times, however, the building yard was set up only after purchases were concluded. In any event, in this case, it also was very rare that the renovation of the building might be finished with a single building campaign. In fact, a series of campaigns usually took place with long periods between each one, and they were often promoted by different members of the family or by different owners. The first intervention usually saw to, among other things, the façade, which was the public face of the building and therefore the representative element par excellence (Giacomini 2002, pp. 88-94).

Whether the buildings rose from a single lot, or from an agglomeration of several lots, the possibility of arriving at that regularity of form required by “good architecture” (Serlio 1584, libro settimo, p. 168) found a strong link in the period’s very widespread practice of renovating buildings by saving as many pre-existent structures as possible. At the base of such decisions were economic motivations that were closely linked to a precise cultural attitude. The attitude of the ruling classes with respect to wealth was the result of a wise dose of sumptuousness and parsimony, and of luxury and moderation in expenses, as can be deduced from the models of behaviour described in

numerous treatises on *economica*, or home economics, of the period like the *Vero metodo della Cristiana politica ed economica* by Odoardo Baviera (Frigo 1985, p. 161). Thus, given the long periods of time and high costs involved in demolition and procuring materials, not only was every possible pre-existing structure saved, but materials from the demolitions required were carefully recycled (bricks, curved tiles, beams, nails and even columns at times), with substantial further savings. For example, the material used in the remodelling of the front part of the Palazzo Medici was estimated at 9 405.01 *lire imperiali*, but 1 077.17 *lire* were subtracted for the value of “old material”, already deducting “the demolition costs” (ASMi, *Notarile*, Cart. 20573, 7 September 1588), with a saving of 11.5%. Moreover, this way of proceeding, combined with the practice of intervening by stages of progress, encouraged localized interventions in only one wing of the building at each step, which made it possible for the patrons to continue living in their own home while remodelling was going on if they so desired (Giacomini 2002, pp. 95-100).

Thus, it is no surprise that people chose a practice of intervention that would allow them to rework their own homes in a respectable manner “with the least possible inconvenience and expense” (Serlio 1584, libro settimo, p. 168) even if it often made it impossible to obtain the perfect regularization of the plan and façade that would be guaranteed by an *ex novo* reconstruction.

## **BUILDING YARD MANAGEMENT AND CONTRACTS**

Important evidence from the period as to the types of contract in use for building yards can be found in the *Formula del offitio del prefetto delle fabbriche* drawn up by the Barnabite architect Lorenzo Binago (1554-1629) (Repishti 1994, pp. 97-118). He lists five types of contract that call for respectively: assignment of work, “*materia et fatura*” (material and labour) to a contractor so that the construction could be finished thoroughly, that is, the type of contract that in the documents considered is called “*a tutta spesa*” (all expenses included); the consignment of labour only, paid by measure, while it was up to the patron to supply the necessary material; the consignment of jobs “*a concorso et al incanto*” (by competition and bidding); the consignment of labour only, but with payment after an appraisal of the work that had been carried out; jobs paid by the day. This last type was recommended by Binago because it did not require surety and it was not necessary to make advance payments on work to be carried out (Repishti 1994, p. 106-7, from which all references to Binago from here onwards are taken).

Despite these advantages, in Milan, running a private building yard by day rate only happened with small jobs or jobs that are split up and spread out over time. Other types of contract in which Binago underlines the risks were all more or less frequently used, even if, as we will see, the patrons tried to guard against connected risks by writing in appropriate terms. However, we can note a definite predominance, above all in the second half of the sixteenth century, of building yards run through partial contracts (jobs by master masons, stonemasons, carpenters, etc.) and preferably for labour only, with purchases managed by the patron, who made use of resellers, or stipulated

agreements with producers. Later on in the century and at the turn of the seventeenth century, there was an increase in partial contracts *a tutta spesa*, which were once mainly for work in stone. Along with these contracts, and with greater frequency in the seventeenth century, there were also contracts for the overall consignment of finished jobs (masonry, elements in stone, finishing, door and window frames), often assigned by submitting tenders. Although there are not many examples available, we can still put forward the hypothesis that this tendency is linked to the process of aristocratization of the ruling classes in Milan, and above all of the patricianship, which sprang up in 1593, when the *Collegio dei Giureconsulti* issued a decree that any commercial or banking art, even if carried out secretly through an agent, was adverse to the nobility (Zanetti 1972, p. 27). This increasingly clear distinction between nobility and productive activity of any sort may have been the basis of the increasingly marked preference for types of contract that increasingly called for less direct relationships between patrons and skilled workers and suppliers. We can hypothesize that attitude was accentuated on the higher rungs of the social ladder, as is suggested by the preference of the Trivulzio family for consignment contracts for finished work.

### **Contracts for labour only**

The contracts for labour only that have come down to us all concern consignment of masonry jobs, with related floors, roofs, floorings and surface finishings, and they were drawn up between the one who commissioned the work and two or more associated masons, “each security for the other part” (ASMi, *Notarile*, Cart. 14709, 28 June 1583). Among the skilled workers operating in Milan, in fact, “partnerships were frequently formed” (Della Torre 2000, p. 308) and this represented a guarantee both for labour as well as for whoever commissioned the work: “It protected the former against business risks, and guaranteed the latter continuity and success in the work. Joining forces also allowed at least one of the master masons in the contract to be in the building yard to offer guidance and check on the progress of the work” (Giordano 1991, p. 167). In cases where the contract was drawn up with a single master mason, the master could then form partnerships with others for the commission, but only if he was given permission by the patron.

Prices agreed upon were for the most part by measure. Excavations for foundations or cellars were paid by *quadretto* (cubic *braccio*, 1 *braccio* = 0.594936 m) and the price also included transport of the earth to a place where it would not interfere with the progress of the building yard and from which it would be easy to remove. The masonry, with related openings for doors and windows, was paid by *quadretto* (square *braccio*) according to thickness (walls from one to six bricks), measured *vuoto per pieno* (i.e. with openings included) “as was customary in Milan” (ASMi, *Notarile*, Cart. 14709, 28 June 1583), as were surface finishings that, however, were more often paid by hundreds of *quadretti*. Instead, in the contract drawn up by the Cusani to build the church of Sant'Agata (Bonavita 2003), a price was established for the masonry work by thousands of bricks laid (ASMi, *Notarile*, Cart. 15425, 3 April 1570), but this is the only case that has come to light. In fact, this type of payment would have doubly penalized the patron in the case of consignments of bricks that were less than standard thickness, since they were paid for by number. Work on vaults, slabs,

cement pavements, brick floorings with any kind of finishing, cobbled surfaces, wooden floors and roofs was always paid for by *quadretto*. The installation of special elements was paid for by unit, for example, the installation of chaining in wood, chains or iron tie rods to reinforce masonry and/or vaults, or door and window frames, of main beams and in some cases stone elements, like columns. For miscellaneous and minor jobs, a lump sum price was usually established, and could include such jobs as the demolition of formerly existing masonry and ceilings and the consequent retrieval and cleaning of the salvaged materials (Conti 1995, p. 44, 18 June 1574), which were otherwise paid for by *quadretto*. In the price agreed upon, the following jobs were usually included: dampening and pouring the slaked lime, sifting sand, making mortar “according to the different qualities of the work” (ASMi, *Trivulzio. Archivio Milanese, TAM, Cart. 425, ante 1614*), dampening the bricks before laying them and assembling or dismantling scaffolding.

Payment was usually in instalments according to the work carried out, subject to measurement of the work, but deadlines, which were sometimes monthly, were not always indicated in the contracts. The contractor almost always got an advance, or *arra*, paid at the time the contract was drawn up, but, once the first advance was paid, others followed in some cases.

Apart from payments in money, the master contractors were allocated a certain amount of wine for every 100 *lire* billed, or in its stead, a surplus in money. This was also the practice in the big building yards like the *Fabbrica del Duomo* (Sella 1968, p. 77).

Jobs had to conform to the indications given by an appointed engineer or by the one who commissioned the work, especially when the latter was a *connoisseur* of art and architecture, like Prospero Visconti, or by one of his agents. Moreover, the work had to “conform to the design and measure” established (ASMi, *TAM, Cart. 425, ante 1614*). Conformity with the project and proper execution of the work was evaluated at the closing of the building yard with an inspection carried out by the engineer of the construction site (designer and/or supervisor of building yard) or by other chamber engineers chosen by the one who commissioned the work or agreed upon by the parties involved. The appraisal for eventual jobs not mentioned in the contract was usually also handed over to the inspectors. Their judgments were in any event unappealable, and the last word was left to the patron.

The one who commissioned the work took on the task of making sure all of the necessary building materials were delivered to the building yard and furnishing the ropes and wood for the scaffolding and ‘usual’ tools and utensils, that is, buckets, baskets, pickaxes, hoists, pulleys and the like. An inquiry that has just been initiated seems to indicate that the *Fabbrica del Duomo* of Milan rented big building yard machines like hoists to private parties and that, besides building materials, and especially slabs of stone, the *Fabbrica* also sold them building yard ropes, which were generally used (Archivio della Fabbrica del Duomo, *registri “Dati et recepti”*).

The master contractors had to carry out the work according to the times set by the patron, and what is more, at least one of the partners always had to be present in the building yard, unless given leave by the patron, and could not be substituted by others. They had to put good masters and workers to work in the numbers established by the patron, who reserved the right to reject labour that he did not think suitable and substitute it with what was in line with his tastes, and all of this was “at the expense and damage of said Master” (ASMi, *TAM*, Cart. 425, *ante* 1614). This clause protected the patron from the risk, as pointed out by Binago, that contractors might not put “good masters” to work, but rather employ workers who were not particularly specialized, and hence the building would seem to be poorly constructed.

In the end, the contractors had to present a guarantor who had to answer for the quality of the work, the observance of the contract and the advance payments received. This role was often held by another master, as is also pointed out by Della Torre (2000, p. 308), and in this case he could correspond with his own work: for example, the master stonemason Martino Carati had stood surety for one of the master masons who had tendered for the work on the noble residence of Prospero Visconti (Giacomini 2003, pp. 80-2). When this master mason died in debt for a down payment received, Carati took it upon himself to pay off the debt in money or by furnishing “suitable stones for this building” (ASMi, *Notarile*, Cart. 14714, 16 March 1589).

### **Contracts *a tutta spesa***

Contracts *a tutta spesa* with master masons were similar to those involving labour only, with the exception that here the necessary materials (inert materials, bricks, curved tiles, wood, hardware) to bring to complete the building were supplied by the contractor, while elements like gratings, door and window frames and even main beams remained the concern of the one who commissioned the work. If the building was located outside the city limits, the patron could allow part of the necessary materials to be extracted from his own property. Giangiorgio Medici, for example, gave permission to the master who got the contract for the masonry work on the castle in Frascarolo to cut down trees in his forests to provide wood for scaffolding and to dig in his land for sand and rocks, as long as it was not “in a harmful place” (ASMi, *Notarile*, Cart. 1023, 16 November 1548). At times, precise indications were given on the quality and provenance of the materials to use, and masters were thus under obligation to adhere to them. However, in any event, they had to carry out the work with good materials and up to current standards, or risk rescission of the contract without obligation of payment for the work carried out up to that point. Such clauses were aimed at reducing the danger, as mentioned by Binago, of being tricked not only “in the workmanship” but also in the “quality of the materials”. The master was, in any event, held to carry out the jobs as indicated by the engineer who supervised the building yard, or else rework them at his own expense.

The price, including labour and materials, was established either as a lump sum at the time the contract was drawn up on the basis of specifications with indications that were also quantitative, or it came out of an appraisal carried out at the closing of the building yard by an engineer chosen by

the patron, upon receipt of down payments. In these appraisals, the prices were by measure or by unit, as were jobs of labour only, except for the fact that masonry was paid for by actual surface, while the openings for doors and windows, above all if they were splayed, were paid for by unit. For lump sum prices, the payment was usually divided into three instalments: for example, Teodoro Trivulzio, for the work done in the garden of his residence, paid one third of the price agreed upon at the same time the contract was drawn up, another third when half of the work was done and the final third when the work was finished, appraised and “to the taste” of the patron (ASMi, *Notarile*, Cart. 30600, 7 April 1656).

The consignment date for the work was fixed, and in the case of work not carried out, the patron reserved the right to have the job finished by other masters at the expense and damage of the contractor. At other times, a penalty that could also concern breach of other contract terms was established. There could also be clauses aimed at protecting the patron from defects that might appear after the inspection. For example, the contract for the masonry work for the Cappella dei Cusani in the church of S. Marco provided for the contractors’ carrying out checks on the masonry for one year in order to make sure there were no cracks or signs of instability, and that they immediately carry out any eventual necessary repairs at their own expense (ASMi, *Notarile*, Cart. 15422, 30 April 1567). Obviously, prolonging the responsibility of the contractors also caused prolonging their guarantors’ liability.

All contracts for consigning work in stone were *a tutta spesa*, but at times, states Della Torre, master stonecutters “worked the raw material supplied by the patron” (2000, p. 306). And in fact, we can launch the hypothesis that in the building yard for the Palazzo Marino as well as that of the Palazzo Medici, for which contracts furnishing stone materials have been found, some master stonecutters were hired with contracts for labour only.

In general, the contract was drawn up with a single master, who if necessary subcontracted part of the work to other skilled workers. The only subcontract that has come to light concerns the building yard of the Palazzo Marino, and it is for labour only (ASMi, *Notarile*, Cart. 12446, 6 June 1558). However, the master stonecutter hired by Leonardo Spinola for work on the façade of his residence (Giacomini 2003, pp. 74-7), also in part subcontracted jobs.

The price of work in the contract was agreed upon by unit for finished elements, like column shafts, bases, capitals and steps; by measure, so much per square measure, for simple elements like ashlar, smooth or bossy, for the facing of façades, so much per linear measure for elements that ran in length, like cornices, stringcourses, entablatures and mouldings. In other cases the price was a lump sum for the entire contract or for single types of elements. The master was held to “make, carve, carry out and adjust the work at his expense in this building” (ASMi, *Notarile*, Cart. 12444, 20 October 1557 and Baroni 1968, pp. 402-5) for the jobs contracted, and they had to comply in form and proportion to the patterns provided by the architect and in the material and way of working

agreed upon. The price usually included transport to the building yard. In some cases, transport was up to the contractor only as far as a *sostra* (warehouse located along the canal in Milan) chosen by the patron, while from there to the building yard, it was up to the patron, while remaining under the responsibility of the master, who had to answer for possible breakage of stone elements in transit.

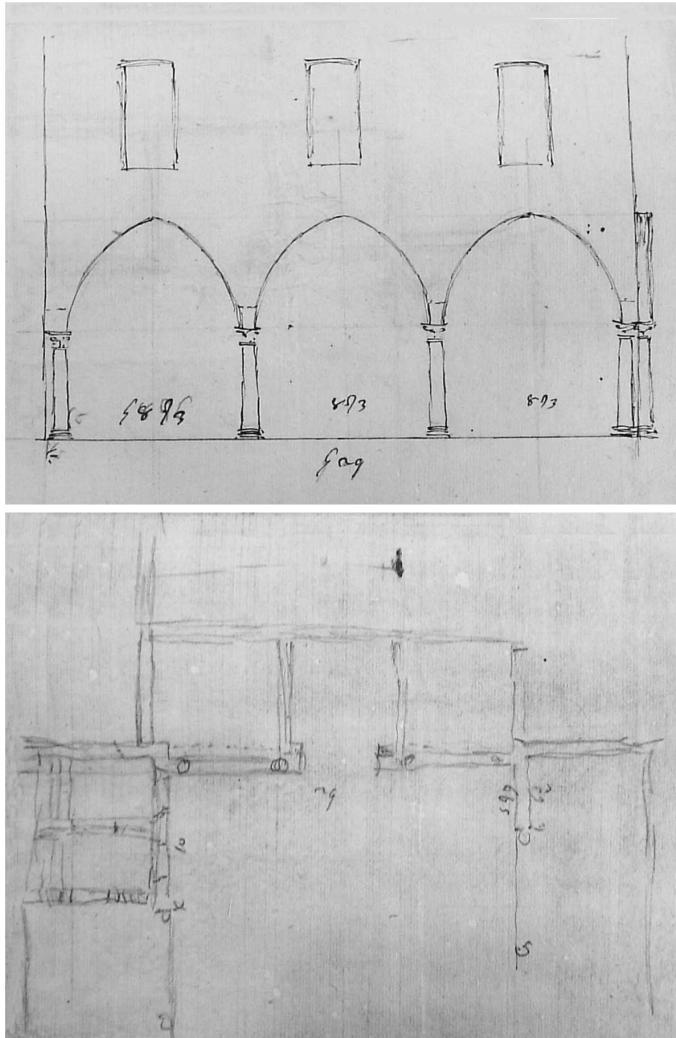


Figure 1. Noble residence of Prince Teodoro Trivulzio, Milan. Elevation and plan for the creation of a new portico (ASMi, TAM, Cart. 93, 22 June 1657; permission no. 45/05).

The payment, after a down payment, could be either at consignment of the various pieces or at pre-determined deadlines, for example, weekly payments, in which case three quarters were often paid



at delivery and the rest after installation. For columns, installed by masons, payment usually occurred in three instalments: down payment; second payment upon delivery to the *sostra*, where the stonecutter had his workshop and where a second phase of work was probably carried out; final payment upon delivery to the building yard.

As for inspections and obligations of the patron and master stonecutters, what we have already seen above was valid with regard to contracts with master masons, including the clause that authorized the patron, if the contractor did not comply with agreements, to have another master stop the work, but at the expense of the contractor.

The two surviving contracts concerning interior decoration, ornamental stucco in one and carved wooden ceilings in the other, are also *a tutta spesa*.

*A tutta spesa* contracts for finished work (or all-inclusive: masonry and stone work, door and window frames, etc.) were drawn up with master masons who were qualified as master-builders, that is, entrepreneurs or *fabbricieri*, on the basis of precise descriptions of the work to be carried out. These descriptions included measurements, forms and type, provenance and quality of the materials to be used. In some cases, for example the Cappella dei Trivulzio in Santo Stefano, samples of stone were “shown in public, during the bidding” (Devoti 1967, p. 124) and then left on deposit at a notary’s to show the quality of the stone and type of work requested. Drawings (often no longer available) were almost always attached to the articles concerning assignment of the work, and they could range from simple sketches with indications of measurements (**fig.1**) to more elaborate dimensioned drawings with pre-existing parts marked in yellow and those to be constructed marked in red (**fig.2**).

In some cases (three examples have come to light, all from the Trivulzio family) work was assigned through the submission of tenders, and, as Binago complains, the winners were the ones who submitted the lowest prices: for example, the tender for the assigning of work on the Palazzo Trivulzio in 1656 was won by a building master who made the lowest offer of the six participants - 14% lower than the highest (ASMi, TAM, Cart. 93, 30 March 1656). In other cases, a lump sum was established.

The other contract clauses are similar to those seen in the contracts for masonry and stone work. As concerns the norms of payment, they called for a final payment to be made after the inspection and approval of the patron.

In the *a tutta spesa* contracts analysed, wine is never mentioned, but in some appraisals, a certain quantity was granted by *forfait*, by percentage or by *brenta* (1 *brenta* = 75.554386 litres) for every 100 *lire*, valuing labour only.

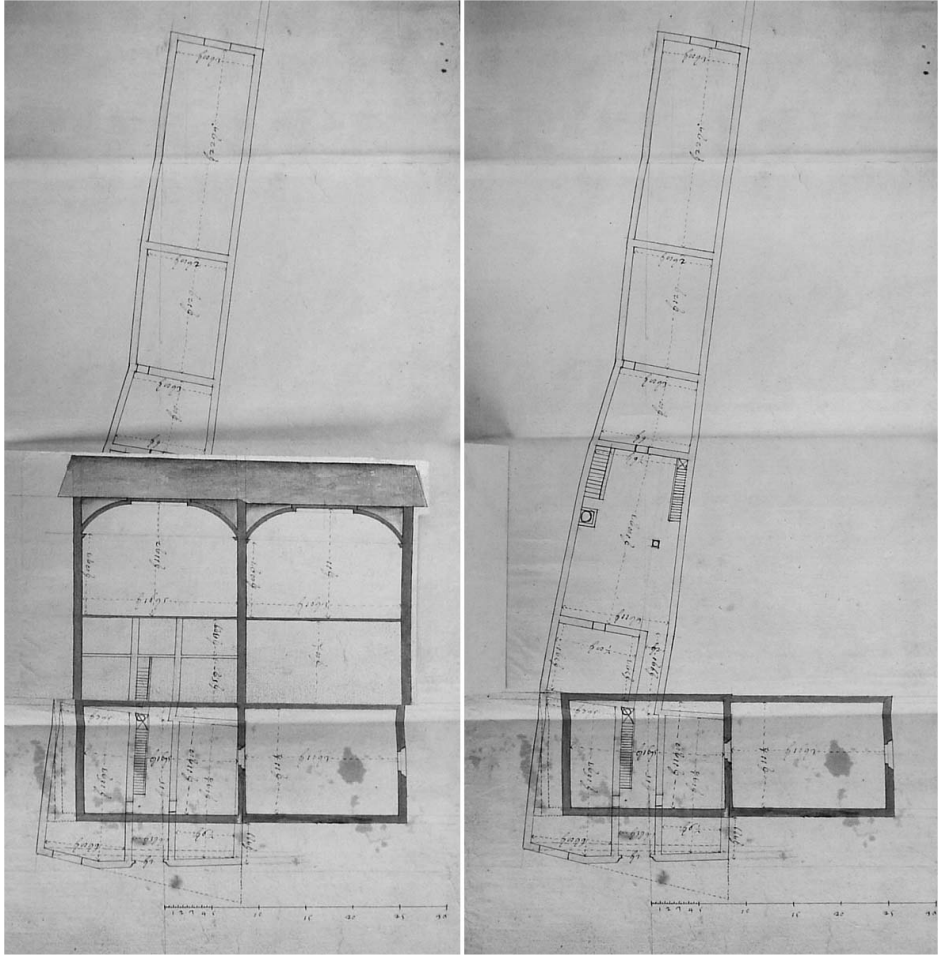


Figure 2. Noble residence of Prince Teodoro Trivulzio, Milan. Elevation and plan for the remodelling of a pre-existing construction (ASMi, TAM, Cart. 96, 18 July 1663; permission no. 45/05).

### Work carried out by day rate

In these cases, as shown by lists of expenses, the patron directly hired the labour (a master foremen and other masters with related workers), which was paid by the day with the addition of a quota of wine, which in the second half of the sixteenth century was of three *boccali* (1 *boccale* = 0.787025 litres) a day for the masters and one and a half or two for workers. Moreover, the patron acquired all of the materials, had them transported to the building yard and provided all of the tools necessary for the work. To the advantages of this way of running building yards that we have already mentioned, Binago adds the possibility of firing labourers at any time the direction thought necessary, and without the risk of protests.

### **Contracts for supplying materials**

The contracts that have come to light concern the supplying of lime, bricks and stone materials. Even among producers, there were partnerships of several individuals, especially among producers of bricks and stone quarriers.

Producers were approached only for large quantities, on the order of hundreds of thousands of bricks, or tens or hundreds of tons of lime and hundreds or thousands of square metres of stone material.

The contracts specify quantity, quality and provenance of the material to deliver according to a pre-established schedule. The orders were made in the winter months and deliveries were usually spaced out between the end of February and the end of October. The price was fixed in *soldi* by the *centinaio* (1 *centinaio* = 76.251714 kg) for lime, in *lire* by the thousand for bricks, in *soldi* by the square unit (*quadretto*), according to the thickness for stone, and it included transport as far as the *sostra* indicated by the purchaser (who was responsible for transporting it to the building yard), excise duty and unloading from the boat. If the quality of the material was not what had been specifically requested, the merchandise could be rejected or the price reduced. For example, Castopolimio Aliverti would pay 14.10 *soldi* each *centinaio* for lime if it came from Valtravaglia (soft lime, but of good quality); otherwise he would only pay 10.00 *soldi* (ASMi, Notarile, Cart. 10600, 17 December 1560).

At the same time the contract was drawn up, a down payment was made, then payments were made at the various consignments or in a single payment once supplies were delivered.

Suppliers had to present a guarantor for agreements made and down payment received. In the case of deliveries not made, the buyer could use other suppliers, and charge any damages to the default supplier.

### **HIERARCHY IN RELATIONSHIPS: ARCHITECTS, MASTER BUILDERS, MASTERS, LABOURERS AND GARZONI**

#### **Project designers and supervisors of building yards**

Lombard engineers/architects, who were usually trained in the building yards of the *Fabbrica del Duomo*, throughout most of the sixteenth century remained bound to the local tradition in which they simultaneously carried out the functions of project designers and supervisors of the building yard, which proceeded under their watchful attention. And for that matter, it was only after 1563 that the “University of master masons and woodworkers” was flanked by the University – only later the Board – “of Architects and Surveyors” (Scotti 1983, p. 92). In fact, in the different building yards analyzed, especially if the project designer was a Milanese architect, we run across the presence of a single architect who designed the project, defined the master plan and working

drawings and the models for the most elaborate details, presided over the building yard, intervened in the choice of materials and finally inspected the work. This seems to have been the role of Vincenzo Seregni in the building yard of the Palazzo Medici (Repishti 2000): Seregni did the project, although upon suggestions from Galeazzo Alessi, and supervised the building yard. In fact, the stonemason Michele Scala said that “m.s Vincentio often came to the *fabbrica* of the Marquis of Melegnano [...] and was paid by the agents of His Lordship the Marquis” (Archivio Storico Diocesano di Milano, *Archivio Spirituale, sez. X*, Metropolitana vol. 63, cc. 134v-143). Seregni also checked on both workers and the supply of materials – even, in fact, supplying pudding-stone for the façade, which had to be “according to the need and order will be given by me Vincenzo Serenio Ingeniero” (Beltrami 1889, p. 63 note 1). Again in 1623 Fabio Mangone seems to have played a similar role in the building yard of the Palazzo Trivulzio. Aurora Scotti thinks that Mangone was the project designer (Scotti Tosini 1993), and in the documents examined, it is Mangone who had to provide the master contractor with “orders, drawings and measurements” (ASMi, *TAM*, Cart. 93, 13 March 1623), and in the end do the inspection.

In Milan in 1565, with the arrival of Pellegrino Pellegrini, who considered the architect as “the one in charge of a project, but detached from the *fabbrica* and practical execution of the work in the building yard” (Scotti 1991, p. 239), and with the birth of the University of Architects and Surveyors, a finer distinction between “the process of designing and actual execution of mason’s work” came to be made (Scotti 1983, p. 92). Pellegrini stated that the architect should not have to “take all of the work onto himself”, but entrust the executive phase “to diligent, strict supervisors” (Pellegrini 1990, pp. 261-2). In this case, the project designer, above all for private job orders, designed the building (at times limiting himself to masterplans) and did the essential drawings, hence the control of the building yard and the drafting of the working drawings were passed on to another architect, the *soprastante*, or supervisor. In these cases, the masters employed were preferably part of the entourage of the designing architect, as seems to be shown by the documents related to the three noble residences of the Spinola, the Cusani and Prospero Visconti, for which we can put forward the hypothesis of a project, or at least a masterplan, by Pellegrini (Giacomini 2003). Hence, workmen were well-known by the architect, who could make sure of their abilities and thus give a greater guarantee on the good quality of the work. In particular, “the workers near Pellegrini were the most qualified” among those found on the Milanese market in the second half of the sixteenth century (Della Torre 2000, p. 308). Similar management seems to be the case, for example, with the building yard of the Cappella Cusani in San Marco: the plan (**fig.3**), attached to the contract with the master masons, and possibly by Pellegrini (Giacomini 2003, p. 79), was not based on available exact measurements of the site and thus had to be adapted by Giovanni Ambrogio Alciati, the supervisor, who was passed on the task of inspecting the work once carried out. A similar attitude seems to have been adopted by Francesco Maria Richini in relation to the noble residence of the Monti (Giustina 1995): he “carried out the tasks of the project design” and compiled “lists of jobs to be done”, but then passed on to others “the task of drawing up the agreements and watching over the progress of the building yard” (Giustina 1996, p. 208).

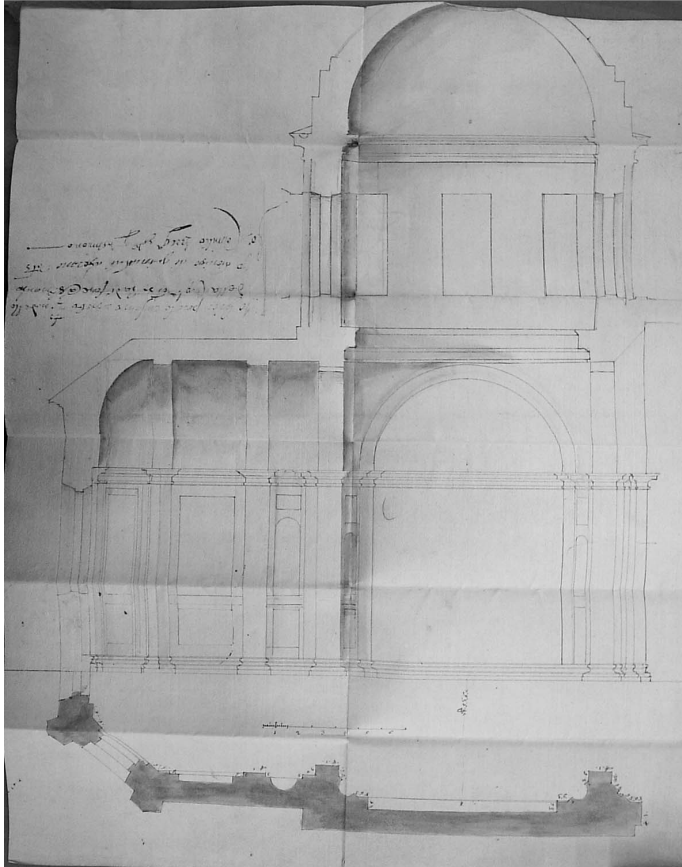


Figure 3. Cusani chapel in San Marco, Milan. Plan and elevation of the chapel, to be adapted to the exact measurements of the site (ASMi, *Notarile*, Cart. 15422, 30 April 1567; permission no. 45/50).

### **Skilled workers, labourers and *garzoni*: roles and hierarchies**

There were numerous skilled workers at work in the building yard: in the first place, there were master masons and master stonecutters, then carpenters and/or woodworkers, blacksmiths, tinsmiths, roofers and, at times, stucco workers and painters.

Whatever the management of the building yard or type of contract might have been, it was the master contractors who brought the necessary labour, that is, all of the masters with specific specialities, and all of the labourers and *garzoni*. After 1568, when the separation between the University of the masons and the carpenters became official, it was compulsory for master masons that took on work that involved carpentry to have it done by a master involved with the related university. The master contractors, or master builders, were the only ones to become legal subjects, to receive payments and hence pay subordinates (Giordano 1991, p. 166).

In the building yard, as can be gleaned from the lists of expenses, more than one team under master foremen for the different arts was at work. In the case of contracts for finished work, there was also a master builder who coordinated the work of the various teams, a role that was otherwise carried out by the one who commissioned the work or by his agents, flanked by the architect appointed to supervise the progress of the building yard. In the lists of expenses, we can identify master foremen, usually indicated by name, and the masters, labourers and *garzoni* who were under them. This hierarchy was emphasized by the different salaries received: for example in 1651 the Trivulzio paid “Maestro Giuseppe Belazo for job n° 13, that is n° 2 by Maestro Giuseppe at 40 *soldi* and n° 5 1/2 by his Maestro at 30 *soldi* and n° 5 1/2 by labourers at 20 *soldi*” (ASMi, TAM, Cart. 94, 1651).

There were guidelines for the relationship between masters and labourers in the rules and regulations for the guilds. However, we must be aware of the fact that, if masons and carpenters were gathered together in a University already in 1450, other categories like stonecutters or stucco workers still were not organized in this way until 1647. In the rules and regulations of the University of master masons and woodworkers (Biblioteca Ambrosiana di Milano, Cod. 176 sup.), we read that “the master can take other masters or workers with him to work”, but there could not be more than two labourers per master, and, in fact, in the lists of expenses we find not more than one or two labourers per master.

Within individual groups of professions, there was a hierarchy linked on the one hand to bargaining power the market and on the other to the degree of specialization and advancement in the profession. Moreover, immigrant workers flanked Milanese workers. For example, in 1642, at the University of master masons, there was a select group of master builders – about 12 – that ran it, and hence “an anonymous mass of temporary immigrants” flanked by a large group of workers from Biella that was well-organized and practically “autonomous with respect to Milanese masons” (Sella 1968, pp. 34-5; D’Amico 2002, pp. 164-74). Most of the stonecutters working in Milan were instead “from around the Lake of Lugano, and lived in the city far from their families, typical for immigrants” (Della Torre-Schofield 1994, p. 203). The above finds confirmation in the documentation analyzed: the master stonecutters cited mainly came from the area around Como and Lugano, while the master mason contractors whose names appear more than once were almost all Milanese. Instead, we do not know where their subordinates came from because there are no indications in the lists of expenses.

The lists of expenses illustrate the hierarchy that reigned in the building yard: master masons and woodworkers occupied the highest wage categories and those few master masons who earned higher salaries probably had responsibilities in the functioning of the building yard; “younger” master masons followed – clearly apprentices promoted to the rank of master shortly before – and roofers, whose specialization was thus less valued than that of masons or woodworkers. We then have the *lavoranti* (labourers), and the broadness of the wage group that concerns them gives an idea of the variety of professional figures meant by this term: from simple manual labourers

recruited as the need required to apprentices more or less instructed in the art that they were learning; then came the *garzoni*, fledgling youths both as apprentices and as manual workers (on these subjects, see: Giacomini 2005, pp. 740-1, 750-1).

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