Appraisal and Evaluation in the Production of Works for the Transformation of the Contemporary City

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Abstract The article develops a series of reflections on a specific theme which, regarding the economic evaluation of the territorial transformation, remains, especially in Italy, particularly critical: the production of the territorial works and services, with specific reference to the public works (the new urban facilities). The subject, involving the Appraisal and Evaluation disciplines, allows us to highlight their fundamental contribution both at the operative/professional level as well as at the formative one. In order to develop the reflections, a comparison between two emblematic cases seem to be particularly effective: the Euskalduna Conference Centre in Bilbao (1999) and the new Conference Center, in Rome (2016). The other Italian events of the unfinished works, the issue of the executive phases in the design process and the fragmentation of the responsibilities, in addition to the continuing absence of a culture of the "project management", allow to underline the important role that the Appraisal and Evaluation disciplines are called upon to play in the production of works for the transformation of the contemporary city, also in the perspective of the new Italian Procurement Code.

Keywords Urban project · Public works · Evaluation process

1 The Objects of the Evaluation

Evaluation has nowadays become a process at the root of all the fields of theoretical and practical knowledge; in particular, in the field of the physical transformation of the cities and the territories, evaluation deals with *objects*. This peculiarity, which distinguishes and strongly characterizes our disciplines form other, deserves some specifications.

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First of all, it would be appropriate to underline that this objects are the product of a *project*, in the overall sense of a program, a plan or a design. Although the notion is "polysemantic", the thematic of the project seems to be an indispensable reference point inside all the reasoning on the urban action.

Among the several definitions, one of the most effective describes the project as a *démarche d'action*; this means, in the urban field, that the project has become a different model of actions on the city and its spaces (Arab 2001).

This approach, beginning from a critic of the classical urban planning regulatory system, refers to the "productive" dimension which, nowadays, characterizes the urban action: this implies responding to the needs and expectations, mobilizing resources, managing constraints, assembling competences, meeting budget and times, combining performances criteria, controlling the risks, etc. This productive dimension allows us to define the Urban Project (in the overall sense of programming, conception, design, realization and management) as «a program which, in a city, pursues the realization of an organic set of actions and works» (Fattinnanzi 2012).

Furthermore, the above objects are strictly related to their territory and are immovable properties—or real estates—, sometimes unjustifiably expensive and needing very long time to get up to speed.

Regarding the relationship with the characteristics of the specific context (physical, cultural, environmental, functional, etc.), these objects are the products of urban projects which, due to their physical and economic dimension, are destined to affect significantly and for a very long time the urban environment. In this perspective the evaluation process becomes determinant and its task is complex. On one hand, the evaluation should increase the quality of the decisional process—both technical and political—in term of resources allocation (monetary, human, territorial, etc.) and in terms of effects or impacts. On the other, the evaluation influences the efficiency of all the programming, assuring a rational basis for the use of the resources to be deployed in the implementation. Then, for an efficient evaluation process, it is necessary, first of all, that the object of the evaluation and the relationships with the context where it is inserted, are well identified.

Regarding the times and costs, the 2014 Report by the Italian Department for the Economic Development and Cohesion (DPS), concerning the times and expenditure of the infrastructure investments, highlights that the times for the realization of the works are very long and they are frequently associated with an increase of the costs. According to the report, if the interventions of an amount inferior to 100 million euros are completed in 2.9 years on average, the works of an amount greater than 100 million euros, take more than 14 years. Specifically, the weight of "crossing times" (the time necessary to pass from a procedural stage to the next one) is particularly relevant (DPS 2014).

This framework emphasizes one of the main problems of the Italian system of production of public works: the low attention to the design phase.

As shown in Fig. 1, inside the whole Life Cycle of the building (divided into the phases of: programming, concept, design; construction; use and maintenance) the

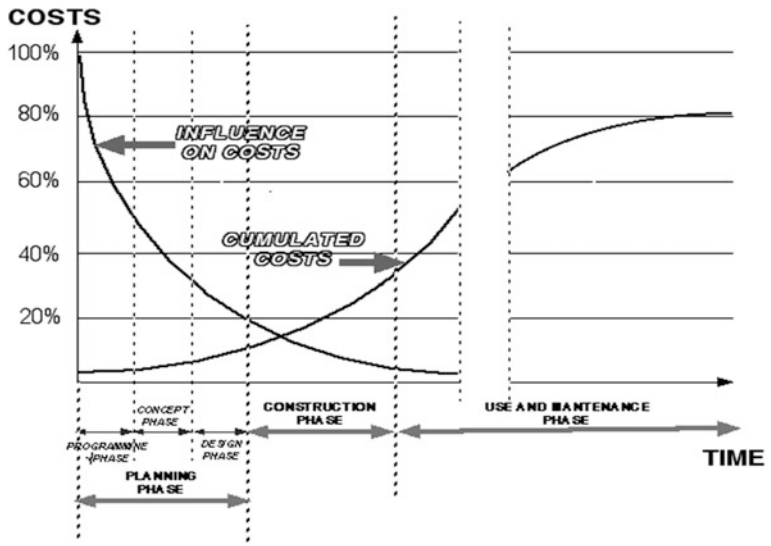

Fig. 1 Influence of design decisions on the *Life Cycle Costs* (modified from Kohler and Moffatt 2003)

early stage of design has a very high potential in influencing the full life cycle and its costs, which decreases over the years.

In that same phase a huge amount of information has to be processed quickly and crucial decisions must be taken. About the 75 % of the costs of the building product are already fixed during the planning/design phase and, in this same phase, it is possible to make corrections. From here, the importance of a continuous and interactive evaluation process to assume performances measurement and indicators to verify the project and elaborate alternatives, emerges.

2 A Comparison Between Two Emblematic Objects (in Bilbao and in Rome)

In order to develop our reflections, we will focus on the specific sector of the meeting industry, one of the fastest growing segments in business tourism (Bensi et al. 2016), which has seen the production of two urban facilities, for different reasons, particularly emblematic: the Euskalduna Conference Centre in Bilbao (1999),—a virtuosos case—and the new Conference Center, the so called "Nuvola", in Rome (2016), inaugurated in July 2016. Both the cases, have been compared and evaluated, offering the opportunity to highlight some critical aspects in the Italian context of the production of public works.

2.1 The Palacio Euskalduna in Bilbao

Starting from the Basque case, *Palacio Euskalduna*. S.A. is a publicly run company owned by the Provincial Council of Bizkaia; the building was designed by the Spanish architects Federico Soriano and Dolores Palacios to look like a ship under construction, because it stands on the site formerly occupied by the Euskalduna shipyard. The architectural works has been conceived, together with the other urban projects (as the near Guggenheim Museum), inside the Regeneration Plan of the waterfront area of Abandoibarra, which is located in a prime location in central Bilbao (Fig. 2).

This area of 35 ha formerly occupied by harbor activities, shipbuilding and transport infrastructure had been a physical barrier cutting off much of central Bilbao from the river. The decision to regenerate the site was made in the mid-1980s.

Since the 1990s an ad hoc public company, Bilbao Ria 2000, became responsible for the reclaiming and valorization of the site; the company, financed by the central Government and the Basque authorities, was created to realize some regeneration urban projects. The investment cost of the Euskalduna Conference Centre was €81,000,000; in 1992 an ideas competition was held; in 1994 the works began and the building was inaugurated in 1999.

Just four years later, the building was designated the World's Best Conference Centre 2003; its economic impacts well demonstrate the success both of the architectural work, which became a landmark of the city as well as the management of the center.

As shown in Table 1, in the first years of activities, the generation of the GDP amounts to 2.6 times the costs sustained for the realization of the work; in the first ten years of activities the production of GDP is equivalent to 7.5 times the investment on the construction. Even after the economic-financial crisis, the generation of GDP, for each year, exceeds the construction costs of the work (Euskalduna Memoria 2015) in a city, Bilbao, which in a period of recession, is the only one, in Spain, with a positive GDP; it is crucial to highlight that only the 6% of

Fig. 2 The Euskalduna Conference Centre in Abaindoibarra (Bilbao), *source* www.euskalduna.eus

Table 1 The economic impacts of the Euskalduna Conference Centre (elaboration of the author, *Source* Palacio Euskalduna S.A., Memoria, 1999–2015)

Years	GDP	Employment	Revenues
1999–2003	€212,383,000	1.059	€21,35,000
1999–2008	€612,694,120	1.162	€52,971,258
2007–2010	€370,486,233	1.441	€28,880,440
2011–2014	€335,664,289	1.321	€26,441,442

the induced an the taxes comes back to the Central Government, the rest is reinvested for the city.

2.2 The Nuvola Conference Center in Rome

Regarding to the Italian case, the so-called *Nuvola Conference Centre* in Rome's southern suburb of EUR, has finally been brought to completion, after 18 years of controversy and €467 million (approximately the double of the initial investment cost).

The work, designed by the Italian architect Massimiliano Fuksas, includes a 9000-m^2 plenary hall which can host up to 6000 people, a 7000-m^2 forum area and an auditorium that can host around 1800 people. Its design comprises 20,000 tons of steel and 58,000 m^2 of glass.

In 1998, one year before the completion of the Euskalduna Conference Centre, the city of Rome, together with EUR S.p.a (a private company with public capital, which is the owner of the EUR district and its buildings, controlled mainly—90%—by the Ministry of Economy and also—10%—by the City of Rome) launched an international architecture competition for the preliminary design of the new Conference center. The urban project was conceived as part of the redevelopment plan for Rome's EUR district; the winner was the project of Fuksas, with an initial cost of 130 million euros.

Despite the jury, chaired by the worldwide famous architect Sir Norma Foster, recommended «also considering the modalities of financing (50 % private resources), a control process aimed to guarantee the compliance with the estimated budget and including a concrete evaluation of the management costs» (Ghio and Tonelli 2000), the events characterizing the "production" of the Conference Center denies this recommendation. Indeed, between one contractor and the other, the project began only in 2007, with ten variants in 6 year, doubling the costs (AVCP 2014).

For what concerns the variants, some of them are attributable to the lacks in the redaction of the executive project which, as in the AVCP document "… they could've been avoided with a greater analysis and knowledge and the necessary integration among the several components of the project (architectural, structural and plant design); this factors have determined an ongoing design revision, that, surely, has penalized the times of implementation" (Fig. 3).

Fig. 3 The new Conference center "Nuvola" (Rome), *Source* EUR S.P.A

In the design process of this important urban project, the lack of any "culture" of evaluation emerges, and, especially during the initial phase of the construction of the design idea (Forte 2015), when decisions are made which will affect all the main part of the production process (as showed in paragraph 1) the absence of a structured and systematic evaluation process, capable of supplying articulated information regarding economic and extra economic aspects, is not more acceptable.

2.3 Deductions

Even though it is still early to know the impacts of the new Congress Center in Rome, despite there being an accurate economic and financial evaluation elaborated in 2013, in a mutate context toward the scenario of conception of the project (Scandizzo et al. 2016), the comparison with the Euskalduna Palace in Bilbao, allow us to frame some inefficiencies, typical of the Italian system.

With specific reference to the architectural work, it is appropriate to remember (Forte and Fusco Girard 2009) that the disciplinary statute of the Architecture forecasts that just by making itself, it solves the problems of the people, not only that of the taste, but the problems in general sense; and here it means talk about functions but, above all, about the relationship with the city and its community. The Architecture stands and affirm itself not only when it is pure form but when it is able to enter and participate into the program of the city, into the project/strategy of its overall development (economic, social, cultural, etc.).

In the case of Euskalduna Palace, the urban project was conceived in the aim of responding to a need: it is what was needed and is part of the program of the city (the Plan of Regeneration of Bilbao). In this program, all the goals have been identified and a precise strategy was drawn up; the resources and the actors were known a priori. For the implementation of the program two ad hoc management tools were instituted (Bilbao Ria 2000 and Bilbao Metropoli 30). A continuous and participated evaluation process has supported all the project phases, with the result of the production of an high-quality architectural work.

In the case of the new Conference Center in Rome, what was the need? How has it been identified? What was the overall program for the EUR area in which the urban project was conceived?

From the beginning, this urban project has been programmed without any certainty of the resources and has been characterized by the uncertainty of the expectations (as for hotel The "Lama" annexed to the New Congress Centre, which even sold yet by EUR Spa to some investment fund whom competes the completion of the work and the commitment of the management to an hotel chain). In addition, the project was conceived in spite of the motivated oppositions of the residents, in absence of any participative process. In Italy, the above aspects highlight as the production of the territorial works and services again represents a uneasy problem to solve, not only for cultural and political reasons (Bentivegna and Fattinnanzi 1981), but also for that concerning the technical aspects and the relationship between the design and the evaluation process.

3 The Role of Appraisal and Evaluation Disciplines

The case of the New Conference Center in Rome, together with many others, allows to underline how, in Italy, the Public Administrations continue to avoid to formalize an evaluation system, adequate to their decisions (Stanghellini 2012). From a general point of view and in a context of recession of the Italian economy, where the trend of the construction sector remains dramatic (in the last eight years the resources for the realization of new public works has decreased of the 45%, ANCE 2014), there is no doubt that the excessive bureaucracy makes the process of production of public works extremely difficult. As documented in the DPS report (2014), most of the delays in the completion of works are caused by the weight of the "crossing times", that is the times of ordinary bureaucracy employed in the passage from the several phases of design and realization; from a public Administrations to another; from an advise to another.

Moreover, the normative dysfunctions, as the neat division among the program and the design phase and the design phase and the implementation, contributes to prevent the integration of knowledge, by now indispensable in each kind of project, avoiding the fragmentation of the responsibilities.

This is one of the main reasons why, in Italy, as well testified by Franco Purini (Forte 2014) the specificity of the designer (Architect or Engineer) as the "creative propulsor" of the overall building design process, fails, unlike other countries where, the designer, is recognized as the figure of "designer" and, together, the "coordinator" of the specialized contributions, in a well-established culture of "project management". It is well-known how at the basis of any building design process there are increasingly complex needs (sustainability, maintainability, comfort, efficiency, social and cultural needs, etc.) which require a teamwork.

This, inevitably obliges the designer to interact with the several specialized knowledge together with elaborate all the possible alternative hypothesis, to be

analyzed and submitted to a continuous and systematic evaluation process. In Italy, the separation between the project and the realization contributes to removing the designer from the implementation process and, then, from the operative knowledge as well as from the updating of the executive techniques.

From the appraisal and evaluation point of view, even if, since the year 1990, the numerous normative and regulation dispositions provide the elaboration of *feasibility studies* (Copiello 2011), a lacking culture of the programming carries on causing wrong expenses provisions.

Then, starting from the normative level, it is necessary to valorize the project and to acquire that culture of "project management" for the control of times, costs and quality, by now consolidated in other countries, but not in Italy (Fregonara 2011).

Regarding the valorization of the project, the recent new Italian Public Procurement Code, the Legislative Decree n. 50/2016 (which, in its implementation, "should" guarantee the administrative simplifications, transparency, contrast to the corruption and high quality standards), substitutes the "preliminary project" with the new *technical and economic feasibility project*. The other two levels—definitive and executive—maintain, substantially, the characteristics of the previous legislation, representing now, the *executive* level, the planning standard for all bidders (while, before, contracting authorities could proceed with the tender on the basis of the definitive project).

The technical and economic feasibility project «identifies, among multiple solutions, what presents the best costs benefits ratio for the community, in relation to the specific needs to satisfy and performances to provide» (L.D. n.50/2016, art.23). This first level of the project seems mainly focused on the concrete impact of the work and on its consequences not only in economic terms.

It should contribute to the auspicated evolution of the traditional "certification" role of the feasibility study, towards a really «comprehensive evaluation process, able to simultaneously deal with many different points of view and focus on the intertwining between the different specialized evaluations, therefore providing the decision makers with a help to make informed and effective decisions and ensuring the stakeholders that the whole design not only some of its aspects support the common interests» (Bentivegna 2015).

In this perspective, it must be emphasized that one of the important innovations introduced by the new Procurement Code is the *transparency into the participation of the stakeholders and the public debate* (Art.22) for the relevant infrastructural and architectural works, as an "obligatory" phase into the decision making process. The demand of the evaluation into the participative decision making process can founds, in the appraisal and evaluation disciplines, the scientific and systematic support, as in the Multicriteria Analysis (Berni and Oppio 2015).

Another innovative element introduced by the New Code, becoming a proper evaluation criterion for the individuation of the most economically advantageous tender, is the *Life cycle costs* (Art.96. DL 50/2016). This marks the passage from the logic of the lower realization price to an approach more careful to the technical and technological choices of the project and to its overall quality, with all the

positive consequent effects regarding the maintenance, management and dismissing costs.

The article, implementing the European Directives 2014/24/UE (Art.68, Life-cycle costing), within the notion of "life-cycle cost" extents the "cost" dimension at the environmental and the social costs. Indeed, according with the Art.96, the life cycle costs include: (1) the costs related to acquisition; (2) the costs of use, such consumption of energy and other resources; (3) the maintenance costs; (4) end of life costs such as collection and recycling costs; (a) the costs imputed to environmental externalities linked to the product, service or works during its life cycle, provided their monetary can be determined and verified; such costs may include the cost of emissions of greenhouse gases and of other pollutant emissions and other climate change mitigation costs.

The attention to the "external costs" and to the method used in their assessment, represents another important element of innovation. In accordance with the European normative, it needs of a rigorous assessment approach, which, although consolidated in the appraisal and evaluation disciplines (Società di Estimo e Valutazione, Rivista 2012), poses further interesting challenges.

4 Conclusions

Many others essential aspects of the new Italian procurement code, which are waiting further specifications by the implementing rules (as example, the introduction of the Building Information Modeling for the rationalization of the design phase, or the role of the Project Manager for specific complex projects), stimulate a final consideration on the role of the appraisal and evaluation disciplines at the formative level.

The theme of the internationalization of the profession plays nowadays a crucial role. In Italy, the prolonged crisis of the building sector is constraining the designers to an increasing specialization; the same design activities have progressively decreased in favor of specialized activities (evaluations, appraisals, energetic certifications, etc.). In this perspective, it seems to be useful to refer the Directive 2013/55/EU on the recognition of professional qualifications, regarding the training of Architects (art. 46). Many points of the Directive allow us to highlight the several contributes which the appraisal and evaluation disciplines are called upon to offer.

As in the *demand analysis* expressed at the point a. of the Directive: "ability to create architectural designs that satisfy both aesthetic and technical requirements"; or in the *formulation of value judgments* (point e. "understanding of the relationship between people and buildings, and between buildings and their environment, and of the need to relate buildings and the spaces between them to human needs and scale"). Furthermore, in the *exercise of the profession* (point f. "understanding of the profession of architect and the role of the architect in society"); although the "Appraisal and Professional Exercise" has unfortunately disappeared from many degree courses, an efforts with regards to the comprehension of what the profession

of Architects means nowadays, even in the perspective of the "project manager", should be made. In the *appraisal and evaluation methodologies* (point j. "the necessary design skills to meet building users' requirements within the constraints imposed by cost factors and building regulations"), nowadays called to face with the "global cost" (the *Life Cycle Costs*, as in the Italian Public Procurement Code), inevitably. The "necessary design skills" means also the ability in the management of the complexity of the project, interacting with the several specialized knowledge together with elaborate all the possible alternative hypothesis, through a «comprehensive evaluation process» (in this perspective, in the Schools of Architecture a different interrelation between the designers and evaluators should be implemented).

The final point k., "the adequate knowledge of the industries, organizations, regulations and procedures involved in translating design concepts into buildings and integrating plans into overall planning" allow us to catch the signals of an actual demand ever more conscious which, for the designer, is necessary to acquire the knowledge of the economic-productive process in the specific sector of the building production (Fattinnanzi 2015).

In this perspective, we would like to conclude with a quotation of an article written by Carlo Forte exactly 50 years ago, on the contribution of the Urban Economics in the urban programming: «…In this specific field of investigation the theoretical enunciations of the Economic Science should be concretized in the practice, identifying the functions of the building constructor on the track of those generically defined for the entrepreneur, the company, the firm» (Forte 1965).

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