

European Guidelines on quality requirements and evaluation in architecture

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Abstract

The paper presents the results of a Europe wide survey on the guidelines that define qualitative requirements for architectural design. The goal was to outline the elements that each European Community country considers as pivotal to enhance the social, political and cultural value of its future architectural heritage and, on this basis, make points to propose strategies to develop a common European language. Starting from the surveys carried out by the European Forum for Architectural Policies (EFAP) on the European Community legislation impacts on the Member States, we compared the guidelines for quality in architecture published in the various countries since 1997. The analysis shows that, despite the efforts made by the European Union to align the various guidelines, the relevant documents remain highly heterogenous both in their structure and in their language. Furthermore, the requirements that each country puts as priority to outline the qualitative guidelines, are defined in a generic

way without going into details useful to specify how they can be achieved. For this reason, in an attempt to find the criteria to define the requirements on which each project might be evaluated, the survey has been widened to examine some regulations of architectural competitions, always considered to be the preferred tool for selecting the best projects. However, our analysis shows that generally even there, no explicit criteria is set to enable a clear and understandable qualitative assessment of the projects.

In this scenario, being impossible to identify unique and shared numeric reference parameters, the digital tools (BIM) increasingly popular in Europe and now mandatory in Italy according the new Public Procurement Code, play a fundamental but not unique role to identify specific criteria for achieving the requirements that define quality.

1. INTRODUCTION

In Italy the construction sector outperformed: in the post-war period it led the economy and the building stock soared (from 11.4 million homes in 1951 to 31.2 million units in 2011 - source ISTAT). Between the end of the nineties and the beginning of the 2000s the sector was really booming, but now since over ten years it is clearly in crisis (ANCE, 2012). The stop in demographic growth, the difficulties in accessing credit, the low profitability of real estate investments, the lack of investment in public

works, and, last but not least, the availability on the market of a large number of unsold real estate units, are all factors that, together with the global financial crisis, have deeply affected the sector leading to an extended deadlock (CRESME, 2015). Real estate capital gains are no longer ensured by increasing the value of the area and are becoming more and more correlated with the quality of the buildings (Alberti et al., 2014). Thus, defining and measuring this aspect has become a key issue. A wide debate in search for widely accepted solutions has been thriving and is involving not only Italy, but various other coun-

tries: US, Australia, China more specifically in Hong Kong, Singapore have been promoting since some time activities to analyse the complex issue of quality in buildings perceived as an important element of their value (Construction 21 Steering Committee 1999; Department of Industry SAR 1999; Tang, 2001; Gibson and Gebken, 2003).

As the real estate market is mainly blocked, the Legislator in Italy enforced a deep structural change in the types of interventions to be carried out in the construction sector. In fact, building new homes or new public works is no longer the main scope, and for this reason, in recent years, interventions to requalify the existing stock and optimize their management are increasingly promoted. This attitude is in line with other European countries that, boosted by the European Union, tend to adopt regulations to improve the cities' architectural level (European Commission's 2011 Energy Roadmap). Given these developments, the Order of Architects of Rome decided to organise a series of initiatives aimed at shedding light on the relationship between design and quality. Among them, the Conference held on 29-30 October 2018 in Rome at the Casa dell'Architettura having the title "The evaluation of the quality of the architectural project", laid the first functional stone on the pathway of including evaluation methods within the design process (Fattinanzi, 2018; Fattinanzi et al., 2018).

Finding ways to introduce these methodologies in the ordinary practice of the architect's profession, might lead to increase the quality even of second-level interventions, which, given their large number, have a major impact on the quality of the urban space. Integrating evaluation in the design process (Forte, 2014) would in fact allow to control in advance the effects of the implementation of each individual solution on the overall quality of the final object, leading to a considerable improvement in the built environment (Mondini, 2009). At the same time, drafting digitally projects according to BIM (Building Information Modeling) methodology, now mandatory according to the new Public Procurement Code for public works (Legislative Decree 50/2016), creates an opportunity to be exploited to analyse and simulate in a very short time alternatives for the improvement of the original idea (Acampa et al., 2019). To make this integration possible, it is necessary to shed light not only on the requirements that guarantee quality in an architectural work, but also on the criteria to implement these requirements (Gann et al., 2003). To be more specific, we found necessary to start by analyzing the laws enacted by the various countries on this issue, as they generally provide generic indications, looking then at the guidelines and regulations issued by specific ministerial offices or by the sector associations.

2. POLICIES ON ARCHITECTURAL QUALITY

2.1 Hierarchy in legislation: European legislation-laws- guidelines

The regulatory scenario related to quality in architecture is uneven and results from the interweaving and interaction of multiple sources issued by the European Community and progressively implemented at national level. The supra-

national regulatory tools aim to guide the legislator-regulator of the single Member State by providing it with a framework that it should adapt to the specific needs of its socio-economic-cultural context in compliance with the homogeneous guidelines established at the European level. This purpose is highlighted by the type of tool used. The directives bind the Member States to achieve certain goals within a specified deadline, leaving wide freedom level to identify the methods and means deemed most functional and appropriate to the internal national organisation. Decisions and resolutions taken by the Council, on the other hand, are guidelines that, although not directly binding, provide agreed objectives and methodologies showing the direction to those called upon to issue national legislation. The role of the European Union (initially Community) is therefore to give an impulse and to steer the regulation on the subject, establishing minimum standards without, however, strictly affecting the decisions of the individual states. Due to the technicalities and the necessary flexibility of regulating the sector at national level, the local Legislator adopts itself a combination of acts of different coercive power. There are legislative acts that dictate binding rules, which are implemented through guidelines and regulations (adopted by government offices as well as by bodies representing professional operators) with a more specific content and, sometimes, having the weight of a simple recommendation. The binding nature of these specific texts depends on the body that adopts them, that is, on the possibility that their compliance is imposed by higher ranking sources that give them a higher degree of coercion. Even in the case of simple so-called "soft law", whose violation is not immediately sanctioned, their content is in any case applied by the operators in consideration of the authority of the enacting bodies.

2.2 Origins of European legislation

In Europe, it was France that took the first stance to develop architectural policies by approving, in 1977, the Law n.77-2 on Architecture. It was aimed at regulating public activity, gave architects a leading role in urban transformation and construction of buildings and owing to it, since its enactment, France has stood out in Europe for promoting architectural competitions that guarantee greater transparency. However, that law remained an isolated example, which anticipated the systematic development of architectural policies by about twenty years. Before the international meeting on architectural policies promoted by the Netherlands in 1997, the European Community Directive on the profession of the architect¹ dated 1985 restricted itself to mention that "*the architecture, the quality of buildings, the way in which interacts with the surrounding*

¹ (85/384 / EE): Council Directive dated 10.06.1985 concerning the mutual recognition of diplomas, certificates and other evidence of formal qualifications in architecture, including measures to

environment, the respect for the environment natural and urban and the collective and individual cultural heritage are issues of public interest”, but it was still far from promoting a systematization and promotion of architectural policies. The 1997 meeting was the first occasion for representatives of government agencies, cultural institutions and professional organizations to come together and exchange views and experiences on the issue. In 1999, under the Finnish presidency of the EU, in a second edition of that meeting, a document on its conclusions was drafted, and was then submitted to the EU Council of Ministers for Culture. This document expressed the need to “create a European network for the dissemination of architectural culture, to raise awareness among decision makers and the general public and encourage public participation”, establishing a forum, the European Forum for Architectural Policies, in which the Member States could share experiences and support the implementation of architectural policies. Thus started a path that in July 2000, under the French presidency of the EU, led the EFAP to outline a draft resolution on the quality of architecture in urban and rural environments that was formally adopted as Resolution of the Council of the European Union² on February the 12th 2001. This resolution was followed in 2005³ by the Directive on the recognition of the professional qualifications, in 2007⁴ by the Council Conclusions on the contribution of the cultural and creative sectors to the achievement of the Lisbon objec-

tives, and in 2008⁵ by the Council Conclusions on the contribution of culture to sustainable development. This last document, while looking at sustainable urban development as the answer to the many challenges that modern cities have face, and in quality architecture the synthetic and innovation tool that can lead to cultural enrichment and well-being for citizens, falls however short from pointing out at how these two objectives might be achieved. In this regard, the Directive that more than the others addresses the issue of the architectural quality’s characteristics, is that of 2014⁶ on public procurement. This Directive, by inviting Member States to prohibit the exclusive use in selection procedures of cost as the criterion to define the most advantageous bid, is strongly oriented towards achieving quality. Administrations are called, as defined in the technical specifications, to set the economic and qualitative criteria related to the contract’s object, so as to allow a comparative assessment of the level of performance envisaged in each bid with respect to the object of the contract. In particular, in order to achieve the best quality / price ratio, the Directive point out at certain issues to which the characteristics of architectural quality must relate, without, however, going into the methodologies through which they can be evaluated. Moreover, in the English version of this Directive, reference is made, for the first time, to the use of “*electronic modeling tools or similar information build-*

facilitate the effective exercise of the right of establishment and freedom to provide services:

“Whereas architecture, the quality of buildings, the way they blend in with their surroundings, respect for the natural and urban environment and the collective and individual cultural heritage are matters of public concern.”

² (2001 / C 73/04): Council Resolution on the quality of architecture in the urban and rural environment dated 12-02-2001 encouraging Member States to: a) *intensify their efforts to improve the knowledge and promotion of architecture and urban design, and to make contracting authorities and the general public more aware of and better trained in appreciation of architectural urban and landscape culture; b) take into account the specific nature of architectural service in the decisions and measures which require it; c) promote architectural quality by means of exemplary public building policies; d) foster the exchange of information and experience in the field of architecture.*

³ (2005/36 / CE): Directive of the European Parliament and of the Council concerning the recognition of professional qualifications, states: *“Architectural design, the quality of buildings, their harmonious incorporation into their surroundings, respect for natural and urban landscapes and for the public and private heritage are a matter of public interest”.*

⁴ (2007 / C 311/07): Conclusions of the Council of the European Union on the contribution of the cultural and creative sectors to the achievement of the Lisbon objectives: *“cultural activities and creative industries, such as visual and performing arts, heritage, film and video, television and radio, new and emerging media, music, books and press, design, architecture and advertising are also playing a critical role in boosting innovation and technology, and are key engines of sustainable growth in the future... and the production of goods and services in the culture sector is not easily transferable and thus forms a stable and sustainable base for*

local and regional strategies for economic growth and social cohesion.”

⁵ (2008 / C 319/05): Council conclusions on architecture: culture’s contribution to sustainable development: *“Europe’s towns and cities today face major challenges: demographic change and its implications for urban sprawl, environmental issues and climate change mitigation, maintaining social cohesion, particularly against a background of economic and cultural change, and the protection and development of architectural and cultural heritage, the way to respond to those challenges is by means of sustainable urban development, a creative, integrated approach under which culture, economics, social affairs and the environment each play an equally important part”.* They also affirm that sustainable urban development implies, among other actions, *“paying particular attention to architectural quality and diversity as aspects of cultural diversity, to heritage conservation and enhancement and to the individual identity of natural or urban landscapes”.* In the same Council conclusions, Member States are invited to: *“a) endeavour to have architecture play an integrating and innovative role in the sustainable development process, beginning with the design stage of architectural, urban planning, landscaping and rehabilitation projects; b) help develop the economic growth and employment potential of architecture, as a creative, cultural industry; c) promote education in architecture and heritage, and in the living environment, in particular through artistic and cultural education; c) promote the initial and further training of architects, urban planners and landscapers as regard sustainable development; d) highlight architecture in implementing the European Year of Creativity and Innovation (2009)”.*

⁶ (2014/24 / EU): Directive of the European Parliament and of the Council on Public Procurement of 26-02-2014 and repealing Directive 2004/18 / EC - Official Journal of the European Union of 03/28/2014 - L94 / 65.

ing”; this reference, in the Italian version, remains more generic, generally mentioning “*electronic simulation tools for building information*”.

This strictly methodological reference, while not directly affecting architectural quality, profoundly changes the design process. The Building Information Modeling (BIM) in fact, allowing to carry out a large number of simulations in a short time, allows to elaborate a large number of alternatives among which the best can be selected through an a-priori verification of aesthetic and performance matters. In this sense it creates an opportunity to integrate the evaluation systems within the design process (Bentivegna 2016; Acampa et al., 2019).

2.3 Current framework of national quality policies

Our research team updated to 2018⁷ a report published by EFAP in 2012⁸, which analyzed the data collected in a survey carried out in the government offices of the Member States regarding the policies on architecture enforced at that date. The results of this study, summarized in the map (Fig. 2) and in the table below, show the level of compliance of each Member State to the European Regulations that have enhanced the role of architecture.

The timeline shows that the compliance process started slowly, involving first Northern Europe - the Netherlands, Denmark and Finland in the first place - but at a later stage it was extended to almost all the countries of the European Union (Fig. 2). The table shows that the Document issued by the European Commission in 2008, where quality in architecture was considered as a tool useful also for tourism and economic development, had the greatest impact, bringing, with its publication, to the introduction of related guidelines in as many as seven countries, and to their updating in another five that had already introduced them.

In summary, the analysis carried out shows the dual role that Europe has had in promoting regulations aimed at spreading quality in architecture: on the one hand it legitimized the policies already adopted in the most advanced countries, on the other it prompted those states that had not yet adopted them, to do so.

In Italy, the legislative act that has transposed the European

legislation is at present the Code of Public Contracts (also called the new Public Procurement Code, Legislative Decree 50/2016) which for the first time introduced BIM and establishes that the basic criterion for selecting the successful bidder to a contract, is the best offer (replacing the previous criterion of the lowest price). This change, of no small importance, binds public entities wishing to entrust the execution of a work to private entities, to take into consideration not only the economic figure of the price to be paid, but to evaluate the project as a whole analysing global economic and qualitative parameters (Amendola 2016; Campo and Rocca, 2017).

To this legislative decree, we should add the guidelines drawn up by the ANAC and by the professional associations and some Regulations adopted by Ministries such as Infrastructure and Transport and Cultural Heritage. Among this multitude of documents, we hold as particularly significant:

- **The Guidelines for the implementation of the Public Procurement Code**, as they are the only ones to provide precise guidance on the criteria and methods for multi-criteria analysis to be used for the evaluation of the most economically advantageous offer (OEPV).
- **The Standard Building Regulations (RET)**, adopted by the Ministry of Infrastructure and Transport in agreement with the Italian Regions and the ANCI⁹, which reorganized and consolidated the construction sector. It defines a common glossary valid throughout the national Italian territory and which, along with the 42 building-town planning definitions, collects the whole superordinate state legislation in the field. Thus, the RET aims to overcome the pre-existing particularism, requiring individual Municipalities to update their regulations in compliance to national guidelines and putting special stress on safety and energy saving requirements. The need to establish mandatory parameters to achieve quality in architectural works has also meant that in 2018 the National Council of Architects submitted a proposal for a framework law on architectural policies¹⁰ aiming to acknowledge and stress the general interest in landscape and architecture as founding elements in the country's identity.

⁹ G.U. n. 268 dated 16-11-169

¹⁰ The bill presented to the VIII National Council of Architecture defines the architecture, and the values that define its quality, imposing the obligation of respecting these values; the field of application of the Law; the project as a work of ingenuity and the fundamental importance of the quality project for well-being and social cohesion, environmental improvement, economic development, safety and environmental compatibility. Recognizes the professional figures admitted to work for the public good. Identify the specific policies necessary to educate, promote, disseminate and improve our living environment. It promotes the integration of architecture and spatial planning, into Italian global cultural, environmental, agricultural, tourist, economic and social policies and defines the timing of the issuing of the implementation decrees capable of making the law operational. Identify changes to existing legislation.

⁷ The survey carried out was the subject of the Report that the author held on the occasion of the Conference “The evaluation of the quality of the architectural project” Rome - Casa dell’Architettura 29-30 October 2018. The Guidelines of 23 Countries were analyzed Union by identifying the requirements deemed indispensable for achieving architectural quality. For each country, the promoting body, the year of issue and the reference of the standard were also indicated. For the retrieval of the data, we thank Claudia Parisi, Mariolina Grasso and Giorgia Marino, of the XXXI-II and XXXIV PhD course in “Civil Infrastructures for the Territory” of the University of Enna Kore

⁸ Survey on architectural policies in Europe - European Forum for Architectural Policies - July 2012.



Figure 1 - Policies on architecture in European countries - status in 2018

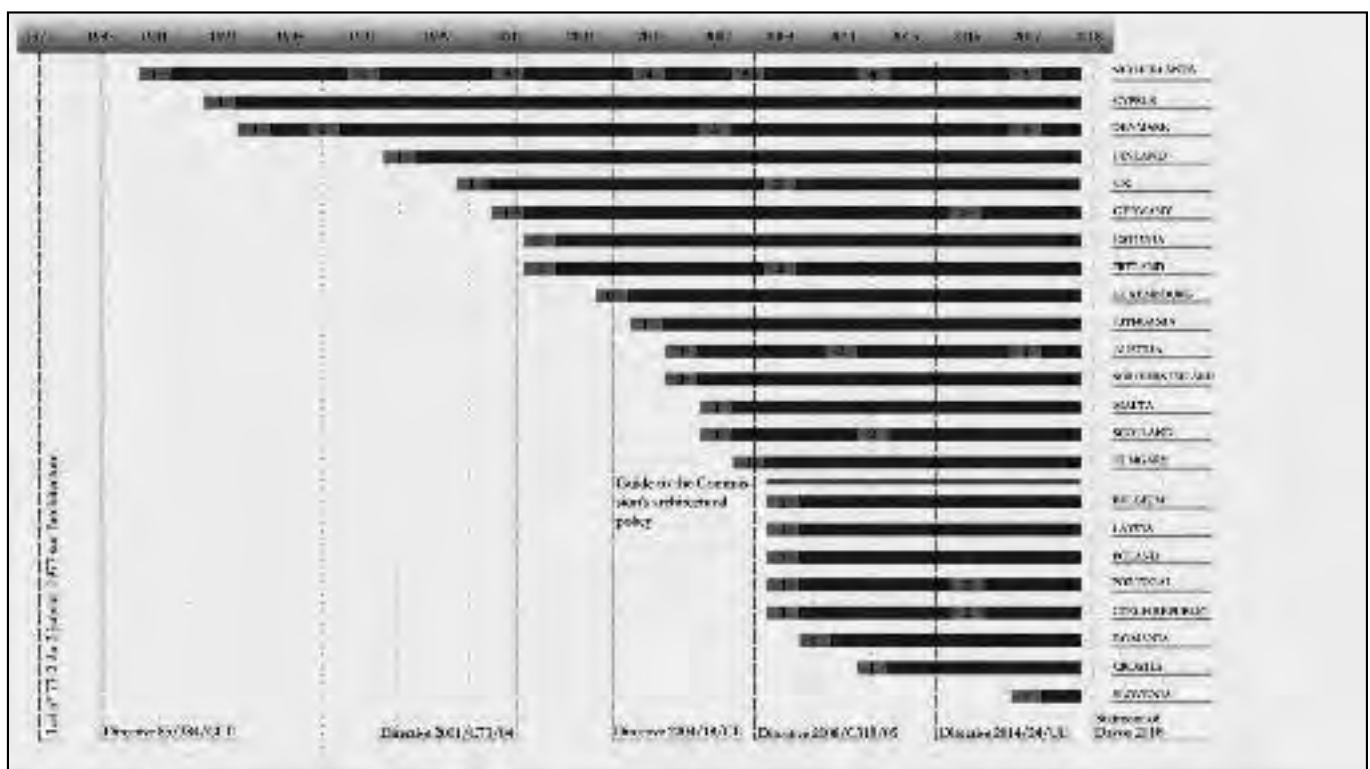


Figure 2 - Guidelines in the European countries - Timeline of the enactment

3. REQUIREMENTS FOR ARCHITECTURAL QUALITY

3.1 Requirements in the regulations

The requirements can be defined as the features required to achieve a goal. In this sense we can say that the quality requirements in architecture are all those characteristics deemed necessary for an architectural work to respond to certain performances. What are the requirements for quality according to the European Commission and the Member States? We have previously mentioned that in the 2008 Council Conclusions, quality in architecture is held as a tool that can lead to the citizens' cultural enrichment and well-being. However, it is only in the 2014 Public Procurement Directive that the requirements necessary for an architectural work to be considered qualitative are pointed out¹¹. In fact, explicit reference is made to technical issues, to the aesthetic, functional, social, environmental and innovative characteristics and to accessibility. Accessibility meant not only as integration of the work in the surrounding environment, but also as the need to abide to all design parameters that make the work usable by disadvantaged users. Moreover, as far as the economic aspect is concerned, the Directive specifies that in addition to the total costs, which refer to the entire building's life cycle, one should also examine those linked to externalities, i.e. the costs stemming from the work's impact on the environment. It is interesting to note that some requirements refer to the work itself, such as aesthetics, functionality and innovation, while others, like the social and environmental ones, depend on the relationship that the work has with its users and with the context in which it is built (Mondini, 2016). It is therefore clear that the focus has shifted from an exclusively economic level to a multidimensional one. It is now also a shared opinion that the quality of architecture and urban settlements is linked to the "social and psychological" needs of the population and that the "cultural heritage is a key element in the culture of quality construction"¹².

Having analyzed the specific guidelines published by the Member States, we can see how these principles have been generally accepted. Even if each country structures them autonomously using its own approach and language, (Fig.

2) each acknowledges that achieving quality in architecture depends on a complex set of factors that has mainly to do with two aspects: public rules and the project itself.

Public rules have to do with the following main issues: urban planning and therefore regulations regarding the interventions, protection of the historical heritage, dissemination of knowledge on architectural culture, social and environmental sustainability, creation of public works that are start-of-the-art and resilient.

The architectural object is almost always analysed in the urban context. Special attention is paid to the historical heritage, even if increasing interest is given also to landscape design.

As far as the project itself is concerned, the aim of the survey was to classify the various requirements set in the guidelines. Four areas have been identified:

- design – including the requisites concerning the professional figures involved and the preferred procedures to approve the project
- execution - including the requirements that refer to the construction phase, defining quality levels for the materials to be used and the procedures for the work's construction
- management - including the requirements related to the architectural work such as aesthetics, functionality, innovation, accessibility;
- economic - to which belong the requirements that refer to the life cycle costs of the building

All regulations provide a guidance in such a way that it cannot be immediately implemented, nor there is a coordination among regulations, rules or certifications that dictate precisely how requirements should be met.

All guidelines therefore remain guiding tools, never translating requirements into quantifiable criteria useful for the evaluation.

3.2 Evaluation criteria

Criteria are the practical translation of the requirements, expressing them in a way that can be measured and evalu-

¹¹ See art.67 of the Directive (2014/24 / EU).

¹² Reference is made to what was expressed in the Davos Declaration of 20-22 January 2018 drawn up by the Ministers of European Culture and by the heads of Council of Europe delegations, Unesco, Icom, which defines the need for high quality architecture as fundamental. 'building culture' or Baukultur.

«Baukultur embraces every human activity that changes the built environment. The entire built environment, including all the designed and built assets that are embedded and related to the natural environment, must be understood as a single entity. Baukultur includes existing buildings, including monuments and other elements of cultural heritage, as well as the design and construction of contemporary buildings, infrastructures, public spaces and landscapes.

We urgently need a new adaptive approach to shape our built environment; one that is rooted in culture, actively builds social cohesion, guarantees environmental sustainability and contributes to the health and well-being of all. This is high quality Baukultur. The project of the built environment, the relationships between objects and their natural and built environment, spatial coherence, scale, matter: these are all factors that have a direct impact on our quality of life. A high quality Baukultur is therefore expressed in the application of a conscious project to all the activities of the built and the landscape, giving priority to cultural values with respect to short-term economic gain. High-quality Baukultur not only meets the functional, technical and economic requirements, but also meets the social and psychological needs of people».

(Amin et al., 2000), which are applicable in different areas and at different stages of the building process. Those include:

- *Housing Quality Indicator (HQI)*: developed by the British Government (Homes and Communities Agency) (DTLR, 2000), measures quality based on the buildings' requirements and the context in which they are placed.
- *Building Quality Evaluation (BQE)*: developed by CIRI (Interdepartmental Center for Industrial Research) Building and Construction which belongs to the network of structures for research and innovation in the Emilia-Romagna region in Italy, is focused on the works' enhancement and management.
- *POE (Post Occupancy Evaluation)*: to be carried out by users on buildings that are already occupied.
- *PROBE (The Post-Occupancy Review of Buildings and their Engineering)*: as above (Leaman and Bordass, 2001)
- *BPE (Building Performance Evaluation)*
- *SIVA SiSco quality*: support and verification in the architectural design phase (Fattinnanzi, 2011)
- *DQI (Design Quality Indicators)*: useful for assessing and increasing the design quality of buildings (Gann et al., 2003)

As far as environmental sustainability is specifically concerned, there is a large number of certifications and assessment methods to verify the buildings' energy performance, from systems based on multi-criteria analysis such as BREEAM, LEED, CASBEE to those focused on Life Cycle Assessment (LCA) such as BEES, BEAT, *EcoQuantum*.

In Italy, the energy-environmental sustainability certification systems are not binding and refer to regional regulations that use the ITACA Protocol, a national evaluation tool, accepted and used both in the public and in the private sector. It is based on the "Green Building Challenge" (GB Tool) international environmental energy assessment system and is used to define the energy performance level of buildings and to encourage and promote sustainable building programs by setting appropriate indicators. The ITACA Protocol is an example of multi-criteria analysis and the multiple criteria taken into consideration are grouped into categories and subsequently into areas of evaluation.

3.4 Architecture competitions and awards

Considered the most suitable tool to identify the best architectural projects, architectural competitions are held by most regulations as the mean to guarantee an improvement in the quality standard by rewarding professional excellence (Giddings and Holness, 1996; Ronn, 2011). The procedure of calling for a competition is, actually, always includes the issue of a notice that should define the criteria used for evaluating the project proposals, in order to make the awarding process transparent and understandable. In this sense, competitions could become a source

of information and inspiration to systematize criteria for quality in architecture. Yet, the analysis of some of competitions showed that they are heterogeneous due to both the promoter and the characteristics of the work. In England, whose architectural competitions are considered among the most prestigious worldwide, we can see that the procedures used by the RIBA (Royal Institute of British Architects) and the British Construction Industry, respectively, differ significantly. The calls promoted by the RIBA are focused on typically Vitruvian values, being based on the concepts of firmitas (solidity), utilitas (function, intended use) venustas (beauty, appearance), and on issues related to economic and environmental sustainability. The British Construction Industry, on the other hand, assesses excellence looking at the entire process and taking into consideration issues related to architecture, facilities, structure, performance and user satisfaction. In both cases, as in all the competitions analyzed, are available only the overall scores given to projects in case they comply to the identified quality requirements, as assessed freely and unquestionably by a jury usually composed of experts who perform their evaluation "behind closed doors".

Therefore, even in the evaluation process regarding calls for competitions, the path to measure and weigh the criteria deemed essential to achieve the qualitative objectives remains unclear. In Italy, the ANAC has produced the Regulation¹³ for the organization and carrying out of Architectural Contests, which is used by contractors as an overall guide to manage competitions. Entities wishing to announce competitions according to the Regulation use the C.N.A.P.P.C. (National Council of Architects, Planners, Landscapers, Conservators) online platform, and competition notices have the ANAC quality logo.

The Regulations specify the procedures to follow according to the type of ideas or design competitions, in order to obtain a quality logo for the competition. The main goal is to share a common language among all operators (clients and participants), enhancing the projects quality and the resources (public or private) employed. The Regulation clearly defines, all matters that have to do with organizing and carrying out a competition - from the requirements, to the procedures, to the actors in the process up to the score assignment. One of the elements deemed mandatory for obtaining the quality logo for the competition notice, is the appointment of a Selection Commission. The Commission takes note of the evaluation criteria set already in the Call for Proposals' drafting phase and it would be desirable for the same to participate in drafting the evaluation criteria to guarantee that they will not be altered in the evaluation phase proper. Finally, the score attributed to each evaluation criterion must be such as not to alter the subject of the call. The sum of the scores must be equal to

¹³ Guide to fill the forms Attachment C1 Regulations to organize and carry out Architectural Competitions – text update on September the 13th 2017.

100, as this is an intuitive criterion for the participants in the award procedure.

4. CONCLUSIONS AND POSSIBLE STRATEGIES

An unstoppable process of enhancing quality in architecture has kicked off. We hold mandatory to be aware of the steps taken in order to fill the existing gaps, and thus suggest strategies that allow to carry out effectively the process. To do this, we cannot ignore the innovations taking place in the procedures and tools to manage architectural projects. The development of the methodologies of Building Information Modeling (BIM) is considered as an opportunity in this sense, as they can become the tool through which it becomes effectively possible to finally achieve methodological and operational integration between design and evaluation. At design level, BIM brings about a great change: the project idea is no longer translated into a two-dimensional language of graphic representation, but in a model that represents a real virtual simulation of the project. A single file contains both dimensional and geometric data and qualitative information related to the technical elements. In this way it is much easier to match the dimensional parameters as well as verify the compliance with some qualitative features. The emergence of BIM methodologies now imposes across Europe a change in the methodological layout of the architectural project with important impacts on the notion of quality and on the strategies to obtain it. The structure of the BIM project makes mandatory to construct abacus¹⁴, which, starting from the aggregation of individual elements, create bottom-up the overall model of the building or architectural work in gen-

eral. It is therefore natural to take care of the quality of the individual elements, verifying their certifications, attaching extensive information related to a wide range of aspects beyond the simple dimensional ones. In this way it is possible to verify the impacts of each choice related to each element on the general model. With the gradual creation of better defined abacus, this in-depth analysis will become more and more easy. It must be said that we are currently at an early stage of this process, given that the abacus are still relatively poor, but the path is now marked. In this sense, it is conceivable that future projects will be made of high quality elements. On the other hand, we point out at least at two risk areas. First of all, this will lead to the standardized use of products which are more widely available and able to obtain the highest levels of certification. This standardization process could cause a trivialization of the project, its loss of identity, with significant cultural impacts on the urban and economic landscape, raising barriers to entry into the markets for new products and new companies. Furthermore, focusing on the individual elements risks losing the overall vision. The assembly of excellent elements does not necessarily lead to an overall excellent result. We therefore hope that BIM procedures will integrate methodologies for assessing the overall quality of the architectural object, leaving a flexibility of approach that allows to maintain the identity of the places and their cultural uniqueness, fundamental to characterize the urban space.

¹⁴ The term abacus means a catalog of BIM objects, i.e. elements that contain information about their characteristics (dimensional, structural, cost, etc.).

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