Nella cultura tecnologica dell’architettura, la norma assume un ruolo cruciale come linguaggio unificante e regolatore della multidisciplinarietà progettuale. Rappresenta uno strumento essenziale per pianificare le attività del progetto e della costruzione, per verificare la rispondenza delle scelte progettuali a determinati requisiti, caratteristiche o comportamenti, e per condividere i risultati attraverso un linguaggio comune, anche in termini procedurali e gestionali nell’intera vita utile dell’edificio. Tuttavia, come spesso evidenziato il ruolo della norma è a volte ambivalente: risorsa e allo stesso tempo vincolo, di origine volontaria ma cogente se associata a requisiti di legge, strumento di semplificazione ma anche possibile causa di confusione e ridondanza.

Sorge quindi la questione se il progetto possa garantire i requisiti tecnici e prestazionali richiesti dalle normative attuali e, al contempo, possa soddisfareambizioni progettuali che richiamano la memoria, la creatività e l’innovazione. Il saggio visivo si interroga su come la norma, o la sua assenza, possa condizionare il progetto evidenziando, attraverso una sequenza di immagini, alcuni temi chiave.

Il recupero e la reinterpretazione di antiche tecniche costruttive e l’impiego di materiali naturali emergono come priorità nelle strategie europee recenti, come si evince dai programmi strategici in atto. L’assenza, però, di normative specifiche o certificazioni che soggetti ai vincoli della Soprintendenza, impone ai progettisti di vincoli impongono ai progettisti di rispetto del valore testimoniale delle risorse e degli ambienti, che necessitano di recupero.

Sembra quindi sempre più urgente che il progettista integri in modo critico nel processo creativo i vincoli normativi e tecnici, traducendoli in soluzioni progettuali adeguate.

NOTE

FROM REGULATION TO PRACTICE

In the technological culture of the design, the regulation plays a crucial role as a unifying language and regulator of multidisciplinary design. It represents an essential tool for design and construction activities, for verifying the compliance of design choices with specific requirements, characteristics, or behaviours, and for sharing the results through a common language, also in procedural and management terms throughout the building's life. However, as often pointed out the role of the regulation is sometimes ambivalent: a resource and at the same time a constraint, voluntary in origin but mandatory if associated with legal requirements, a tool for simplification but also a possible cause of confusion and redundancy.

The question therefore arises as to whether the project can guarantee the technical and performance requirements demanded by current regulations and, at the same time, satisfy design ambitions that recall memory, creativity and innovation. The present visual essay questions how the regulation, or its absence, can condition the project. It highlights, through a sequence of images, some key topics.

The recovery and reinterpretation of old building techniques and the use of natural materials are emerging as a priority in recent European policy, as evidenced by current strategic programmes. However, the lack of specific regulations or certifications for traditional technologies and materials can direct design choices towards average and industrialised products rather than local and traditional ones. In fact, the use of such technologies is often left to the discretion of designers who, with great effort and surplus labour, manage to create works of their own responsibility, applying regulations from other contexts or based on empirical evidence.

An example of this is Emergency's pediatric hospital in Uganda built in rammed earth (Figures 1, 2 and 3), based on the traditional "pisè" technique used in local villages. Buro Milan, in collaboration with the French research centre CRAterre, developed the engineering criteria for the RPBW project. The absence of specific regulations or Eurocodes for load-bearing earthen structures required special directives from other countries, such as New Zealand, to define ‘codes of practice’ and certify the project using excavated earth as a structural material.

Similarly, the contribution of research centers, universities and associations appears to be decisive in the development of specific technical standards oriented towards materials that are not well established in the building market, such as biogenic materials or those derived from agricultural waste. The load-bearing pavilion made from straw bales, represented through some images of the construction phase (Figs. 4, 5, 6 and 7), exemplifies this approach. It is part of the “ECCELLENZA_TEC” research project of the Politecnico di Torino, financed by the MUR, and involves the construction of full-scale prototypes to experiment the use of natural materials and the application of advanced construction techniques, aimed at achieving high environmental performance.

Promoting the dissemination of regulations and standards to enhance the architectural and environmental quality of construction is the objective of voluntary standards such as green building rating systems. The redevelopment of the "L’Acquedotto" Cultural Centre in Nepi (Figures 8 and 9), certified by Green Building Council (GBC) Italy, is an example of the transformation of an abandoned and degraded site into a landmark for the entire community.

Compliance with the energy and environmental standards defined by the GBC certification protocols enabled the project, also subject to the constraints of the Superintendency, to reach the Gold level of certification and win the "Leadership in Design and Performance" award during the GBC Italia Awards in 2022. The regulations, while being a tool for guidance and simplification, can in some cases generate inconsistencies in the transition from one phase of the process to another, such as from the design phase to commissioning. Figure 10 shows, for example, a construction detail of a façade that appears to adequately meet the calculations required by the energy regulations, but which, by not guaranteeing the construction and technological requirements of the correct installation, compromises the same energy operation.

Compliance with the energy and environmental standards defined in the GBC certification protocols allowed the project, also subject to the constraints of the heritage protection public body, to reach the Gold level of certification and to win the “Leadership in Design and Performance” award at the GBC Italia Awards in 2022.

While the regulations are intended to guide and verify the design process, in some cases they can create inconsistencies in the transition from one phase of the process to another, such as from the design phase to installation. Figure 10, for example, shows a detail of a façade that appears to respond adequately to the energy performance required by the regulations, but which compromises the same energy performance by failing to guarantee the structural and technological requirements of correct installation.

Finally, regulations can be a constraint in the restoration of historic or listed buildings, for example in terms of seismic or energy performance. These constraints require designers to be critical in order to respect the heritage value of the works. Figure 11 shows an example of the many historic Italian hamlets in need of restoration, located in mountainous areas at risk from earthquakes. It seems increasingly urgent for the designer to critically integrate regulatory and technical constraints into the creative process and to translate them into appropriate design solutions from the earliest stages of the project. In this sense, a rethinking of the standards and regulatory framework, based on an integrated approach and highlighting limitations and opportunities, could strengthen the concept of building quality, which is inextricably linked to the pair ‘project and regulation’.

NOTES

2 Research group of the DIST department (Prof. Andrea Bocco with Redina Mazelli and Arthur Bohn) with the consultancy firm GreenThink. Turin Polytechnic students and volunteers took part in the project and the teaching workshop.
Emergency Children’s Surgery Hospital, Uganda. Project: RPBW, TAMassociati e Building Division di EMERGENCY; Structural design: Buro Milan; Photo credits: Maurizio Milan
Emergency Children’s Surgery Hospital, Uganda. Project: RPBW, TAMassociati e Building Division di EMERGENCY; Structural design: Buro Milan. Detail of the construction of the load-bearing earthen wall, a construction technique of “pisè” (rammed earth technique). Photo credits: Maurizio Milan
Experimental Pavilions of Vegetarian Architecture, Grugliasco (TO). Research group of the DIST department Politecnico di Torino (Prof. Andrea Bocco with Redina Mazelli and Arthur Bohn). Photo credits: Luis Reyes (Fig. 4); Redina Mazelli (Fig. 5); Simone Andreis (Figs. 6, 7)
Edificio in costruzione. Crediti fotografici: Andrea Levra Levron
Building under construction. Photo credits: Andrea Levra Levron
Historic hamlet in seismic zone, Villar Perosa (TO). Photo credits: Andrea Veglia