
LOCAL+GLOBAL
innovative symbioses in architectural education
International Colloquium

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01 Introduction

Europe faces huge challenges in the near future in what concerns to energy efficiency and consumption reduction in buildings, housing stock condition and ageing people needs. However, due to the diversity between European countries, strategies to be implemented need to be different and adjusted to reality of each geographic area. This diversity, reveals a variable geometry in continental distribution, based on:
- economic and financial situation
- urban / rural settlements
- geographical features

Even in the distribution of architecture and design schools, Europe have an uneven geographical distribution.

This communication intends at first to present information about the construction reality in Europe, existing buildings condition in southern Europe 

Europe, especially in Portugal, in comparison with the average of European situation. The investments in new construction and renovation of existing buildings are also important issues under discussion to define new ways that can lead future activities of training. Finally, architectural education, young architects training, new tenden-cies and skills, are object of reflection.

**02 Knowledge about construction reality in Europe**

While we reflect about the modalities of architectural teaching to implement in practice and knowledge to forward to the students, is fundamental to be aware and have information about constructive reality and the expected changes. This reality can be easily based on statistical reality contained in national/regional census or economic reports.

As an example, it is fundamental to get information about the population and floor space distribution, the building stock, the existing buildings age and their condition, the housing deprivation / overcrowding rates, segmentation of European countries construction economies or about different volumes of investments in new construction and renovation or refurbishment of existing buildings.

![Image](image-url)

Europe’s Top 100 Schools of Architecture and Design 2014 [7]

[7] Europe Koppen map - climate classification
[8] [Link](https://upload.wikimedia.org/wikipedia/commons/b/b7/ Europe_Koppen_Map.png), accessed in 2016.10.20


The investments in new construction / renovation of existing buildings are also important indicators about the realities and tendencies that the construction interveners have to know to assure that the training of future architects is according with future needs.

Report of FIEC – EUROPEAN CONSTRUCTION INDUSTRY FEDERATION titled “Key Figures – Activity 2015 – Construction in Europe” (10) public informs that in 2015 the main activities in Europe construction sector had the following distribution:

- Non-residential (offices, hospitals, hotels, schools, industrial buildings) – 31.5%.
- Rehabilitation and Maintenance (in housing) – 27.7%.
- New house buildings (individual dwellings, apartment blocks, social housing, schemes) – 21.5%.
- Civil Engineering (roads, railways, bridges, tunnels, concrete structures, special foundations, electrical, works, water supply, wastewater treatment, works on maritime or river sites) – 19.2%.

Euroconstruct reports (11) also define different areas of regional coverage for European countries (Big 5 countries, Northern Europe, smaller European countries and Eastern Europe countries) and reveal that renovation investments dominates housing output in Western countries while civil engineering and non-residential investments lead in Eastern Europe.

The information on housing completions for
In what concerns to repair needs, statistical information reveals that 29% of Portuguese buildings (more than 1 million) needed repair works. If this analysis is refined, 55.25% (560,000 buildings) of so-called “ancient buildings” (built before 1960 decade) have repair needs, 13.43% (+120,000) need major works or are too much degraded and 5.51% (+50,000) are very much degraded.

Analysing data related to very recent buildings condition (built in last 10 years), about 5% (25,720) already need repair actions and 1,656 buildings (0.32%) are very degraded or need major works. This information allows to deduce that within 10 years Portugal will have new problems to solve...

More detailed information gives data about degradation rate of buildings by municipality (Degradation index = d (Municipality) / d (Country), where d is the % of buildings with medium and major needs of repair or very much degraded the basis for geographical intervention can be better detailed and strategies of action better defined.

In my opinion, the knowledge about... - traditional construction techniques, - building’s anatomy, - inspection and diagnosis methods for the existing situation, - space’s flexibility, - the needs of elderly people “silver hair users”, - building materials, indoor air quality and health, - building’s pathology, - new thinking and design processes, - construction management, - financial, quality and deadlines optimization, - interaction between different specialties... are some of essential features to implement in architectural studies.

For example, if an efficient final energy consumption of a building is intended to obtain, different components must be analysed to guarantee an efficient design process. The design process must integrate trilogy of shelter, identity and comfort. It means that spatial, functional and aesthetic aspects are fundamental but special attention on building envelope (different constructive elements and solar orientation), installations (providing renewable energy devices) and indoor air quality has to be taken, in parallel with the study of user needs and behaviour.

In another way if it is intended to rehabilitate or adapt an existing building for actual exigencies, maintaining architectural characteristics and façade elements, without previous elements of design, it is fundamental to proceed to a comprehensive survey of building. However, to perform this kind of work, the responsible must have survey techniques skills, inspection and diagnosis methods knowledge and also to dominate traditional construction techniques to evaluate the possibilities of including new constructive elements compatible with existing ones.

Efficient design has to consider new perspectives of space’s flexibility for new kind users or new family’s standards and also consider the evolution of European population and needs for
manage safety and good accessibilities, included in suitable internal organisation.

When an overview of the traditional construction sector is performed, the continuous process of construction development phases can be segmented starting by extracting raw materials, continuing in product manufacturing, design and engineering, construction, operation and maintenance, renovation or demolition and restarting process considering demolition results as a raw material or including it in new artificial products manufacturing.

Nowadays, in those traditional construction processes, architects usually act in design and construction segments. There exist some opportunities for young architects if they invest on acquiring new skills or they are trained in a new way based also in technical instruments and innovative approaches. They can work as energy experts on design or as aggregators at construction or even at operation and maintenance segments.

On design it is possible to bring new competences in product development to the market, based on services and ICT but also implementing marketing and organizational innovations. On construction segment, innovations can be obtained in processes, marketing and organisation, guaranteeing financial, quality and deadlines advantages by optimizing planning of human and technical resources. Those new skills also can be used by young architects if operation and maintenance segment is taken in consideration as one of the fundamental elements for ensuring quality throughout whole life cycle of buildings.

05 In conclusion

The Habitat III, United Nations Conference on Housing and Sustainable Urban Development, to take place in Quito, Ecuador, next October 2016 includes, in its 109th proposal of work to be discussed and implemented in future, “We will include data disaggregation to allow a differentiated analysis of housing supply and demand considering the specific social, economic, and cultural dynamics on subnational levels. This will inform the implementation of housing and urban development programs, with housing at the center of the strategy and to the extent possible, situated at the center of the city”.

The text clearly defines the need to disaggregate and study data information and consider subnational levels of social, economic and cultural dynamics as basis to define different strategies to implement development programs. This implies the need to be aware about differences of local and global knowledge implementing different approaches, respect for the difference and local tradition, the need to take care of existing build-

ings, to avoid new defects and new pathologies in interventions.

In resume, the design for the future need to be conscious of the importance of Mankind evolution and related construction history.

As an “infiltrated agent” in an Architectural environment, during the colloquium and the related presentations and discussions about “how to do”, I tried to learn a little more about but I still have more questions in my mind.

- The “grands travaux” of renowned architects are so fundamental for our evolution?
- Architecture can be global and also well contextualized in all cultural, local and climatic contexts?
- How to deal with and understand the local architecture? Shall we show some respect for the traditions of each country? Or impose our own criteria?
- Can we avoid pathologies while we choose particular materials that we think they are globally usable?
- What kind of new skills are needed?