



Urban & Architectural Models for Innovative Education

Pablo Campos Calvo-Sotelo

Universidad Ceu-San Pablo (Spain)

utoplan@telefonica.net

Abstract

The quality of Education is intimately tied in with human attitudes, but also with the quality of its urban setting and Architecture.

This paper traces an innovative concept: the “Educational Campus”, a model that may be applied to creating or transforming institutions of Higher Education, which has been used by the Spanish Ministry of Education in the national Program “Campus of International Excellence”.

Innovative Education and, thus, University excellence, should be founded on some principles: Education is an affective act (implying special attitudes between faculty and students); Education is a collective act (a group generates more knowledge if members work together, building up a community of learning); Education is a spatial act (human contact is necessary to achieve a complete formation for future citizens, beyond their achievement of mere technical abilities). The insight underpinning the “Educational Campus” is that the human contact that makes education possible must take place in a real location; therefore, we should ask ourselves about the role that Architecture has to play in the transformation of Universities towards excellence.

A campus can foster and project externally values that serve as paradigms to society. Physical spaces for housing Education and Research activities should address the goal of becoming “lessons” in themselves. The ambits of Architecture are accordingly essential to the ultimate mission of every institution of Higher Education: the all-embracing formation of a human being as a future citizen. Through sound planning (making use of the “Educational Campus” innovative model), Universities can improve the nature of their spaces, transforming them into places where innovative teaching&learning modalities can be hosted; and there are four scales of intervention: relation between University and City; the Campus as an autonomous precinct; the building as an architectural piece; and finally, the classroom, as the basic educational cell. The design of a campus and its context must reflect a committed search for quality and be directed to the intellectual, psychological and social formation of a university student.

1.-Some fundamentals on Education

In the current international University situation, it is time to remark an important assumption, namely, that good Architecture consolidates the good University. This conviction lies on some fundamentals:

Education is an affective event. The mission of a University is the integral formation of human beings; consequently, that transcendental process requires necessarily a sensitive approach from faculty to students. As stated by the Spanish philosopher Sampedro, education is a sum of love and provocation.

Education is a collective act as well. It has been demonstrated through the history of institutions addressed to this social function that a group progresses more than the individuals in the genesis and transference of knowledge. As a consequence, a University campus becomes an ideal environment where to build up a true community of learning and research.



And Education is a spatial act. If human contact is necessary component of integral formation, that activity has to happen within a physical framework; and there is where Architecture plays a key role, as the material host of such a relevant relation. Universities cannot be understood properly or planned without a global consideration of their physical spaces, as the material projection of their global reality.

Urban&architectural places designed to house activities of education and of research ought to fulfill functions beyond those of service as a part of the built context.

Recent studies, such as Pink's: "A whole new mind: Moving from the Information Age to the Conceptual Age" point out that IQ accounts in a reduced portion of career success: just 4% - 10%. (Pink, 2005). Consequently, we must ask ourselves what factors account for successful student learning? Amongst others (curiosity, challenge, etc.), the quality of space plays a key role in motivation.

2.-The current European and Spanish context: an opportunity for excellence

The European Higher Education Area (EHEA) is provoking a major change in the University System.

In parallel, some countries are developing national programs to foster innovation: United Kingdom, France and Germany. In Spain, the Ministry of Education (in coordination with the Ministry of Science and Innovation) launched in 2009 the Program "Campus of International Excellence". The basic aim of the initiative is to promote transformations towards excellence and internationalization. Through a policy of aggregation amongst Institutions of Higher Education, the Program inspires new visions of campus that can be used by Universities for innovative change. The adaptation of physical spaces to the teaching&learning modalities promoted by the EHEA requires a sound reflection about the nature of all those spaces; the Spanish Program "Campus of International Excellence" takes care of the urban&architectural implementation of all Universities as a fundamental component of Higher Education.

3.-The Educational Campus: a modern conceptual tool for transformation

The "Educational Campus" is a concept that was born in 2005, together with the design of the new Campus of the University of Salamanca, in Spain, and published in the Review "Programme on Educational Building" by the OECD (Campos, 2005) and in the book "Spain-Campus of International Excellence" of the Ministry of Education (Campos, 2010).

A first approach to the concept

University Architecture has the essential aim of modifying human behavior, fostering visual comfort and psychological wellbeing. As suggested by the German professor Rudolph Arnheim:

"The Sensualist philosophers have reminded us forcefully that nothing is in the intellect which was not previously in the senses" (Arnheim 1962, p.2)

Within Europe and Spain, Higher Education in its built form has not shown in the last decades enough energy, as reported in the case of Spain by acknowledged professors such as Antonio José Campesino (Campesino, 1995), or Josefina Gómez-Mendoza, (Gómez-Mendoza et al., 1987).

The current European and Spanish context is an invitation to change. The "Educational Campus" was conceived as a paradigm for transforming any Higher Education establishment. It begins with the idea that the built form of the University should become a "lesson in itself and by itself. Planning a University precinct entails a special commitment to its urban, cultural, economic and social environment. Universities have the obligation to be avant-garde in all their manifestations, including of



course Architecture. Both designing Higher Education Architecture as indeed, the Educational Campus itself - involve "works of Art". As explained by Thomas Gaines:

"Unlike the two-dimensional art of painting, the three-dimensional art of sculpture, and architecture, in which the fourth dimension is function, a campus has a fifth dimension: planning. The well-planned campus belongs among the most idyllic of man-made environments and deserves to be evaluated by the same criteria applied to these other works of art." (Gaines, 1991, Introduction)

The Ten Principles of the "Educational Campus"

University Architecture transmits added value to the Institution: the sense of human habitation on Earth (Purini, 1980). If the built environment does not wholeheartedly relate its users, it is an empty shell. This is a devastating outcome, as the group SITE noted, particularly since Architecture is the only genuine public artform (Restany, & Zevi, 1982, p.16). Amongst the values that the design of physical space should look to foster and proclaim, the following ten may be considered, as commandments of the "Educational Campus":

First.-Utopia and integral planning. Inspired by the energy of Utopian envisions, Universities must create a "sense of place" for the Campus users, towards the performance of "learning communities" (Gabelnick, 1990). Absence of identity with "place", the sense of "belonging", of being supported in both study and research, evaporates.

Second.- Building up a community of learning&research. A sense of close personal contact is essential. It can never be entirely replaced by the "virtual campus", which nowadays is one of the greatest dissolvents of educational values. As Richard Dober, whose experience of Campus Planning spanned some four decades, stated in the Annual Conference of the Society for College and University Planning (USA, July 2003): "Internet transmits facts, but not values". Transmitting the latter demands an ad personam relationship. Architecture assumes an extreme importance, in promoting that human touch.

Third.-Fostering spatial harmony, a feature closely connected to sensorial and psychological perception, and to the requirement of arranging masses and voids on a human scale.

Fourth.-Performing a physical metaphor of the "affective&intellectual embracement" corresponding to teaching attitudes. This implies the creation of a built allegory that reflects a "mental reference type" closely aligned with contemporary values and attitudes in education. A physical space provides those using it with comfort and protection, indispensable if students are to fulfill their aims and ambitions.

Fifth.-Incorporation of Nature and Art as active cultural values. This implies a sound sensitivity of physical spaces to the natural environment. A deft and well-designed overall architectural framework is a powerful medium for integrating the individual with the natural environment. Used thus, Architecture ensures that appropriate and judicious ties are laid down between the University built space and its natural environment.

Sixth.- Considering image and accessibility. A sensitive projection of the University towards its context implies paying attention to local culture and traditions. Mies Van der Rohe believed:

"Architecture is the will of an epoch translated into space". (Mies Van der Rohe, 1923).

Consequently, the design of any architectural unit should project a suitable interpretation of the locality's heritage.



Seventh.- Adequacy to local environment, fostering sustainability values and techniques. A built environment must of necessarily factor in the conditions present at a particular site. If buildings are appropriately adapted to context, the advantages in terms of sustainability that result, are considerable. Architecture may foster renewable resource usage, through recycling processes, energy saving and its attendant efficiency. Recognizing this priority includes strategies across such areas waste management, sustainable transportation and bio-climatic Architecture. (Campos, 2008)

Eighth.- The acknowledgement of past educational urban&architectural paradigms, harmonized with a commitment to avant-garde spatial ideas. This consciousness of the “architectural memory” finds outstanding types in History. Why this particular value merits its place in “The Educational Campus” can be justified on much the same grounds as those put forward by Barry Blesser & Linda-Ruth Salter:

“Evolution is fascinating just because it has the potential to offer explanations about phenomena that would otherwise appear to have no explanation.” (Blesser, & Salter, 2006, p. 317)

Besides, sharing knowledge with other cultures (building “bridges” between educational Architectures) can be an outstanding tool to plan innovative changes in the Universities of one particular country.(Campos, 2007).

Ninth.- Generating close ties between University and City. Increasingly, Universities are being required to be innovative as much in laying down new pathways of transformation as in defining new procedures for increasing synergy with Society, whether through spatial solutions, facilitating a vibrant interaction of Campus with its social and economic surrounds, through raising scientific output, or stimulating economic growth (Clark, 1998; 2005). In effect, no HEI can nowadays be taken seriously if it remains in glorious isolation from the overall social context of its Nation (Gardner, 1992). Yet, there are caveats even so. As Hale, remarked:

“It is a road which leads to disaster to lift a solution to a problem from one country and to try to apply it unaltered in another”. (Hale, 1987)

Tenth.- Designing of new spaces to host and foster innovative teaching&learning modalities, as the best way to adapt University buildings to the EHEA.

Proposing these Ten Principles of the “Educational Campus” has the purpose to recall that planning University environments ought to be bound into the idea of positive evolution. Arguably, such a task is best developed by a diverse group, as this tends to create more inclusive plans, and deals with a wider range of needs (Proudfit, 2000). Planning means foresight, anticipating change and incorporating flexibility (Daigneau, 2005). It is an instrument indispensable for strengthening the feasibility and sustainability of a Campus, and to realize that the world of today for Higher Education is completely different from the past (Keller, 1983).

4.-Conclusions. Towards an innovative University international scenario:

The four scales of the “Educational Campus”

Besides the academic transformation, the implementation of the EHEA implies an unavoidable revision of the physical space, at the four scales of any University relation between University and City; the Campus as an autonomous precinct; the building as an architectural piece; and finally, the classroom, as the basic educational cell. The architectural dimension of universities is critical for assuring the overall quality of the maturation of any student. This point is also made in documents, issued by the European Higher Education Area (EHEA):



*"Ministers stress the need for appropriate studying and living conditions for the students, so that they can successfully complete their studies within an appropriate period of time without obstacles related to their social and economic background".
(Council of Ministers, Berlin communiqué, 2003, p.5)*

The "Educational Campus" involves four consecutive scales.

The first scale applies to the relation between University and City. When located in an urban environment, the University's physical representation projects an important statement about the positive benefits that accrue to both town and gown.

The second scale focuses on the precinct ("campus"): an integrated environment made up of built volumes and open spaces, the latter where the natural environment has a key part; campus express metaphorically the unpredictable character of modern Education (Turner, 1984, p. 304).

The third scale applies to the individual building. The division of its interior space, partitions, or mobile screens adaptable to different learning/teaching modalities, is the neat expression of the University's engagement in the promotion of alternative learning environments.

The fourth and final scale is the classroom. Alongside the formal amphitheatre, different forms of "teaching cells" can be designed, thereby extending the variety in both the University's range of programmes and in the settings in which their contents are dispensed.

Universities are complex organizations and variable. Hence, before tackling the issue of the four scales of the "Educational Campus", some basic principles are in order.

Flexibility, which is a decisive feature in a University reform that drives across several areas, student learning not least. In their 2005 report on the "progress" of the Bologna Process, Reichert and Tauch noted:

"In re-designing more student-centred curricula, institutions must foresee that students will need more guidance and counseling to find their individual academic pathways in a more flexible learning environment". (Reichert, & Tauch, 2005, p. 20)

Instructing capacity of Architecture, an idea involved in the concept of "Educational Campus"- As Orr remarked in The Nature of Design,

"The curriculum embedded in any building instructs as fully and powerfully as any course taught in it." (Orr, 2002, p. 137)

Architectural units within an educational complex serve as "3D texts" and very especially so when sustainability is built into the design goals of universities:

"Transparent architecture and engineering systems are ideal in a learning setting because they can engage students imaginations and spur learning about buildings as 3-dimensional textbooks" (Nair, & Fielding, 20005, p. 80)

A University environment, including both Architecture and open spaces, ought to express a special engagement to its specific natural (landscape, ecology and climate), social and urban context. The paradigm of the "Educational Campus" can guide Universities towards excellence in Education, through urban&architectural innovative models.



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