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Schools as homes: educational environments, resilience and Architecture
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Abstract

1.-Education and human component: the power of transforming spaces into places

Education is a human event characterized by three basic features: affective, collective and spatial. The emotional component is essentially generated by the relation between teachers and students; but Architecture can contribute to the transcendental mission of configuring friendly environments that increase psychological well-being. If the physical space is designed to meet this objective, it will collaborate in the transformation of mere spaces into real places, adding the human dimension as an enriching quality of the built areas. Schools are an extraordinary field of study in this regard, since they are erected as institutional extensions of the family environment. Their design can be inspired, precisely, in the notion of home. Thus, architectural composition must be carefully elaborated, as it motivates learning.

2.-School environments, climate emergency and resilience

Architecture must face current societal challenges, such as climate emergency, and promote resilience. Educational environments must be added to this, due to the transcendence of their formative mission. Resilience encompasses protection against risks, and climate emergency. But it is worth adding proactivity in school projects. Architecture has much to contribute to all those senses, since it stimulates the student and the community towards human education and progress.

To promote resilience, school architecture must meet regulations in terms of safe locations and constructive solutions, but it can also become a "three-dimensional textbook", exercising an added formative dimension. Thus, school environments can acquire an "educational" facet in itself, a concept that directly associated with the paradigm of the "Educational Campus".

3.-Criteria for school design: construction, composition and poetics of space

The formal ideation of any school must pay tribute to holistic quality. Based on this premise, certain design criteria can be proposed, so that schools achieve an "educational" quality. They are grouped into three blocks: construction, composition and poetics of space.

Construction. The existing constructive regulations on disaster risk reduction must be complied with. But they can be coordinated with other facets, called to induce psychological well-being. Among others, the adequate temperature and ventilation, which ensure homoeostatic balance, natural lighting and acoustic comfort, avoiding interior reverberations.

Composition. Architectural composition is a toolbox of theoretical and practical strategies, whose purpose is to achieve aesthetic excellence. The compositional process guarantees the integral quality, including the incorporation of artistic expressions to schools (painting, mural, sculpture). Composition unfolds a dialog between three agents: functional programme, style, and the characteristics of a "place". Sensitivity to this "place" is also vital in the theories inherent in resilience, as a positive adaptation that begets responses to overcome vulnerability. Links between educational premises and their location are critical, especially in high-risk locations.

Poetics of space. As an artistic discipline, architecture must contribute to mental health and well-being, specially within educational environments. Schools can generate psychological comfort in students, opening their feelings to the poetic evocation of home as an experiential paradigm. Poetry inspires architectural creativity, as it translates feelings into shapes. Schools can incorporate elements of the phenomenological universe: garden, courtyard, stairs, threshold, nests, fireplace, niches or corners. They all evidence direct connections with places present in homes. Metaphors support architectural design for schools in two ways: social and geographical. The social aspect implies understanding a school as a coherent fragment of society. The geographical metaphor focuses on the dualities "ceiling-sky" or "floor-earth". The ceiling represents the sky, artificially replacing the vast celestial vault; concave sections remark a sense of welcome. This morphological simile can be extrapolated to the plane of safety: in case of natural hazard, schools can serve as emergency shelters. In architecture, protection has psychological connotations. Students enjoy more in a safe and relaxed environment, generating emotions such as visual mastery and the sense of "spatial embracement". To create these "places", architectural composition is supplemented by furniture, reinforcing resilience, as the protection it entails supports the individual's response to possible danger. The floor is a metaphor for the earth, a "rationalisation" of the terrain, establishing a rootedness in the "mother earth". Besides, a resilient school must avoid overly large dimensions and heights, as those would not promote the sense of "spatial embracement".

^{*}Full paper is being prepared for publication. Further details to be announced.