Adapting Inclusive Residential Models To Match Universal Accessibility And Fire Protection

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Abstract : In 2015, the UN approved the 2030 Agenda on Sustainable Development. Being the motto 'Leaving No One Behind' (LNOB) the central and transformative goal. In this regard, the 11th Sustainable Development Goal, SDG-11, states that cities and urban settlements must be inclusive, safe, resilient and sustainable. All existing buildings should meet basic safety conditions and be equipped with safe and accessible routes, along with visual, acoustic and tactile signals to protect their users or potential visitors, and regardless of whether they undergo rehabilitation or change of use processes. However, the technical difficulty and high costs involved in adapting the entire built environment are evident. Moreover, from a social perspective, we consider the need to prioritize buildings occupied by the most vulnerable groups of people that currently do not have specific regulations tailored to their needs. Some residential models in operation are not only outside the scope of application of the regulations in force; they also lack a project or technical data that would allow us to know the fire behavior of the construction materials. However, the difficulty and cost involved in adapting the entire building stock to current regulations can never justify the lack of safety for people. Hence, this work develops a simplified model to assess compliance with the basic safety conditions in case of fire and its compatibility with the specific accessibility needs of each user. The purpose is to support the designer in decision-making, as well as to contribute to the development of a basic fire safety certification tool to be applied in inclusive residential models. This work has developed a methodology to support designers in adapting Social Services Centers, usually intended for vulnerable people. It incorporates a checklist of 9 items and information from sources or standards that designers can use to justify compliance or propose solutions. For each item, the verification system is justified, and possible sources of consultation are provided, considering the possibility of lacking technical documentation of construction systems or building materials. The procedure is based on diagnosing the degree of compliance with fire conditions of residential models used by vulnerable groups, considering the special accessibility conditions required by each user group. Through visual inspection and site surveying, the verification model can serve as a support tool, significantly streamlining the diagnostic phase and reducing the number of tests to be requested by over 75%. This speeds up and simplifies the diagnostic phase. To illustrate the methodology, a case study in the Valencian Regio (Spain) has been selected. The adaptation of the entire built environment to meet fire requirements should be mandatory. Given the difficulty and cost involved, it is important to establish a basic level of essential conditions to which buildings could gradually adapt within a specified period. Verifying compliance with a basic security level can allow a quality seal and a public register of buildings adapted to fire regulations to be established, similarly to what is being done with other types of attributes such as energy performance.

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