

This research develops a procedure to evaluate and refurbish obsolete buildings obliged to comply with the Spanish Technical Building Code. This procedure matches the building typologies selected to the optimal solution for each case. The analysis focuses on buildings constructed between the 1960s and the 1980s in Castellón, Spain. The buildings selected are representative of the period, of compact cities, and of the Mediterranean climate region. Three types of intervention on the envelope have been considered. The analysis for the most appropriate intervention in each case was based on economic, environmental, technical, and social factors. It shows that the best solution for Terraced Houses (TH) and Multi-family Houses (MH) is exterior refurbishment with additional insulation on the façade. This solution is achieved at reasonable cost by reducing one-third of the primary energy consumed. The best solution for Apartment Blocks (AB) is exterior retrofitting with ventilated façades, which offers the best performance from a technical, environmental, and economic perspective. In all cases, interior retrofitting is ruled out given that exterior retrofitting with additional insulation provides greater energy savings at a similar cost.

