Following the aim of the research, a preliminary analysis of the common architectural typology and construction systems used in the last decade in hospitals has been carried out. Additionally, a dynamic energy simulation was carried out to evaluate quantitatively how the building envelope affects the rooms' set temperatures and energy demand. The building for this study was selected based on preliminary research regarding the typology of hospital buildings constructed in the last decade in Europe. In a second phase, a healthcare building was selected and a deep analysis of the indoor conditions was performed. The simulation was performed on the 5th floor of the hospital building and the results of the rooms selected for the study were analysed. All of them were located in an urban area in different cities between 38o to 52o N latitude. One of the key parameters in the design of these types of buildings is the layout. The first phase has been to select the representative typology and construction systems used.