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Erkan Bursa P (2022). A Historical Perspective on the Impact of the Infectious Disease Outbreaks on Architectural and Urban Changes. *J. Civil Eng. Urban.*, 12 (3): 27-35. DOI: <https://dx.doi.org/10.54203/jceu.2022.5>

## Research Paper

### A Historical Perspective on the Impact of the Infectious Disease Outbreaks on Architectural and Urban Changes

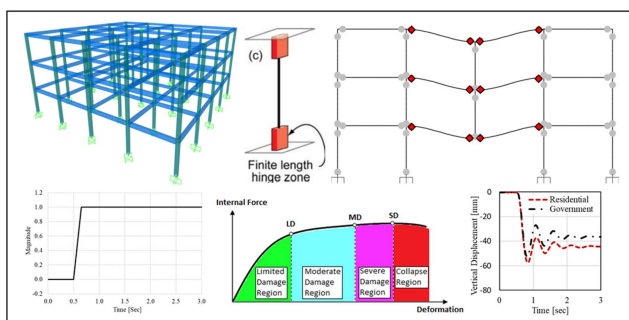
Erkan Bursa P.

DOI: <https://dx.doi.org/10.54203/jceu.2022.5>**Abstract**

There has been illnesses and pandemics all through the history effecting the cities. Some of the most significant architectural and urban changes occurred in the cities due to infectious illnesses. The recent emergence of the coronavirus disease (SARS-CoV-2) which was declared as a pandemic in March 2020 with its continuing effects on human life despite all technological and medical advances in the last century and together with the phenomena such as population growth, rapid urbanization, increase in urban and architectural life comfort, has led to an immediate expectation to produce solutions with rapid changes in urban and architectural areas. This paper investigates what happened in the history of cities to develop healthy and hygienic living environments in search of an evaluation whether it is possible to provide humanity architecturally with living spaces in cities free of illnesses or if it is an illusion in terms of reality.

**Keywords:** Healthy Cities, Healthy Design, History of Architecture, History of Cities, Pandemics.

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Demir A (2022). Progressive Collapse Evaluation of Low-Rise Reinforced Concrete Buildings Designed for Different Occupancy Classes. *J. Civil Eng. Urban.*, 12 (3): 36-43. DOI: <https://dx.doi.org/10.54203/jceu.2022.6>

## Research Paper

### Progressive Collapse Evaluation of Low-Rise Reinforced Concrete Buildings Designed for Different Occupancy Classes

Demir A.

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DOI: <https://dx.doi.org/10.54203/jceu.2022.6>

#### Abstract

The study aims to investigate the progressive collapse behavior of low-rise reinforced concrete buildings designed for different occupancy classes. For this objective, two low-rise reinforced concrete framed buildings were designed independently according to the Turkish Seismic Code for Buildings by considering the Residential Occupancy Class and Government Buildings Occupancy Class. A nonlinear dynamic analysis method was employed to evaluate the progressive collapse response of the buildings by using the alternate path direct design approach of UFC 4-023-03 and GSA-2016 guidelines. Three-dimensional finite element models were created for the analyses, and fiber hinges were used to represent the nonlinear behavior of the load-bearing members. Three column loss scenarios were implemented independently. The analysis results show that the residual displacement of the residential building is higher than that of the government building in all column removal scenarios. Moreover, the damage conditions of the residential building are commonly worse than the government building for all column loss scenarios. It is deduced from the study that the buildings experienced the most severe local damage, disproportionate to the initial failure, under the inner column loss scenario.

**Keywords:** Progressive Collapse, Occupancy Class, Nonlinear Dynamic Analysis, Reinforced Concrete, Turkish Seismic Code for Buildings.

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