

Abstract

Unprecedented population growth along with the development of science and technology in mega cities has brought about various problems for the inhabitants of these cities. One of the biggest such problems is environmental pollution. In this respect, noise pollution can be considered one of the biggest ones. Noise pollution as one of the biggest environmental problems is responsible for a large part of the pollution in our big cities. There is a mutual relation between noise pollution on the one hand and industrial technology on the other hand. In other words, as technology improves further each day, various aspects of noise pollution start appearing in our society. Noise pollution can be also considered as a big issue in buildings. What keeps the inhabitants away from the outer space and the noise pollution is the outer walls in a building. Thus, this layer should be made in a way that provides tranquility and relaxation including acoustic tranquility for the inhabitants of the building. In this paper, first, we introduce the modern types of outer walls in buildings. Then, considering the site we have chosen in our study, these materials will be considered. It should be mentioned here that we have used ODEON software in order to determine the acoustic performance of various materials used in the study. We hope that the result from the current study will be able to be used by experts and engineers in designing buildings which are more resistant against noise pollution.

Key words: *Noise pollution, building's outer wall, common building materials, ODEON software*