

Noise Barrier Technique as a Way to Improve the Sonic Urban Environment along Existing Roadways Assessment: El-Gish Road Street, Alexandria, Egypt

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Abstract : To improve the quality of life in cities, a variety of interventions are used. Noise is a substantial and important sort of pollution that has a negative impact on the urban environment and human health. According to the complaint survey, it ranks second among environmental contamination complaints (conducted by EEAA in 2019). The most significant source of noise in the city is traffic noise. In order to improve the sound urban environment, many physical techniques are applied. In the local area, noise barriers are considered as one of the most appropriate physical techniques along existing traffic routes. Alexandria is Egypt's second-largest city after Cairo. It is located along the Mediterranean Sea, and El- Gish Road is one of the city's main arteries. It impacts the waterfront promenade that extends along with the city by a high level of traffic noise. The purpose of this paper is to clarify the design considerations for the most appropriate noise barrier type along with the promenade, with the goal of improving the Quality of Life (QOL) and the sonic urban environment specifically. The proposed methodology focuses on how noise affects human perception and the environment. Then it delves into the various physical noise control approaches. After that, the paper discusses sustainable design decisions making. Finally, look into the importance of incorporating sustainability into design decisions making. Three stages will be followed in the case study. The first stage involves doing a site inspection and using specific sound measurement equipment (a noise level meter) to measure the noise level along the promenade at many sites, and the findings will be shown on a noise map. The second step is to inquire about the site's user experience. The third step is to investigate the various types of noise barriers and their effects on QOL along existing routes in order to select the most appropriate type. The goal of this research is to evaluate the suitable design of noise barriers that fulfill environmental and social perceptions while maintaining a balanced approach to the noise issue in order to improve QOL along existing roadways in the local area.

Keywords : noise pollution, sonic urban environment, traffic noise, noise barrier, acoustic sustainability, noise reduction techniques

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