

Cleming
Appendix 2
Pas. 1

The Impact of High-Rise Buildings on the Living Environment

Botir Giyasov^{1*}, Irina Giyasova²

¹Moscow State University of Civil Engineering, Yaroslavskoe shosse, 26, Moscow, 129337, Russia

²Tambov State Technical University, Sovetskaya St. Tambov. 392000. Russia

Abstract. Urbanization as a socio-economic process manifested in the concentration of the population in modern big cities contributes to the development of high-rise building construction. With the development of education and culture, changing leisure habits, city residents put forward new architectural and functional requirements to the living environment and urban infrastructure. This calls for the creation of new types and forms of residential buildings, the structure of the city and transport networks. In addition, the need to develop high-rise building construction is justified by the growing demand for residential, public and administrative buildings and the lack of free space. The paper analyzes the development of high-rise building construction in urban areas. The problem of the impact of high-rise building construction in big cities on the living environment is considered. Using analytical methods, causes and sources of pollution, such as transport and engineering infrastructure have been identified. In some urban areas, there are zones with modified thermal conditions and air exchange resulting in the formation of the "urban heat island". The qualitative and quantitative characteristics of variations in temperature and wind speed with respect to the height of the building have been calculated, using the example of the Evolution Tower of the Moscow International Business Center ("Moscow City"). Calculation and comparative analysis for the cities of Moscow, Khanty-Mansiysk and Vladivostok has made it possible to assess the variation in temperature and wind speed and their impact on the living environment under different climatic conditions.

1 Introduction

The rapid growth of the economy of the leading countries is contributing to the development of big cities. In connection with intensive internal and external migration of people to big cities, the population density is increasing. As a result, the number of modern multi-storey buildings and high-rise buildings is increasing, and the engineering and transport infrastructure is developing at an incredible pace. A modern metropolitan area is a living environment that combines a natural environment, a high-tech production environment, an intensive transport environment, a recreation environment and a high-density residential environment.

* Corresponding author: dandyr@mail.ru