

ПРОЕКТИРАНЕ НА ВИСОКА СТОМАНОБЕТОННА СГРАДА – ПРОБЛЕМИ И РЕШЕНИЯ

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DESIGN OF A HIGH R.C. BUILDING – PROBLEMS AND SOLUTIONS

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Abstract:

The report examines the stages of the modal analysis of a high administrative building with 12 overground and 2 underground floors, with a total built-up area of 22660 m². For the report, the decisions are 3 in number. The first solution is a wall construction system with reinforced concrete cores to the staircase and elevators and structural walls (washers). Concentration in the middle of the vertical elements is extremely unfavorable due to the large area of the floor slabs – 1416 m², with a maximum distance between columns – 10,80 m. The second solution is a mixed system - the development of a frame construction, while retaining vertical elements from the first solution. Once again, the results obtained are unsatisfactory. The third solution is an addition to the second solution, adding vertical steel X-links on the facades. The results meet the requirements of the standards for design and postulates of Dynamic of the Building Structures. Schemes and drawings of the vertical constructive elements are given, as well as information on connections (variants) between steel and reinforced concrete. Information is given for: Dimensions of elements, materials and impacts. Schemes of the vertical elements are shown schematically in the relevant solutions. Analyzes were performed with the Tower 7 software. The seismic analysis is spectral according to Eurocode 8.

Keywords:

Modal Analysis, Constructive Systems, Eurocode 8.

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