

CONSTRUCTION IN DENSE URBAN PLANNING

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Annotation. The article reveals the features of construction in a dense urban area. Recommendations are given on the placement of temporary household facilities, accounting for geotechnical conditions and environmental issues.

Relevance. Dense urban development is a common phenomenon in the modern world. Such conditions for the construction of buildings and structures have a number of difficulties for construction related to the limited area of the construction site. Increasingly, new facilities have limited underground space. This often has a negative impact on the performance of nearby buildings and structures, which often have economic and cultural value.

Materials and methods. In conditions of dense urban development, the erection of buildings and structures is complicated by the limited space allocated for the construction site. It is necessary to arrange evacuation departures (passages) on the construction site; ready-to-use fire hydrants; fences around the pit/restrictive fence; emergency fire extinguisher; canopies over pedestrian zones along the construction site, indicators of the areas of work.

In the case of a limited construction site, temporary, residential structures may be removed outside the site. Such buildings include: dining rooms; sanitary facilities; administrative and residential premises; workshops and workshops for reinforcement, plumbing and joinery; closed warehouses; concrete pumps, cranes and other construction machines.

Placement of large tower cranes, erection of crane paths is not possible because there are existing buildings and structures around the building area. Therefore, mobile cranes, easily mounted tower cranes with a crane area not exceeding 9 m² are used, and which do not require a crane track device, as well as self-erecting cranes and heavy-duty self-propelled cranes.

For the construction of buildings in dense urban development it is necessary to maintain the operational properties of existing buildings and structures around the area of development. For this purpose, a technical assessment of the impact of new construction on the stressed deformed state

of the bases and foundations of existing construction is performed. In such conditions, groundwater levels may be increased or decreased. After the execution of the geotechnical forecast, the radius of the zone of influence and the value of additional deformations of the bases and foundations of existing buildings and structures become known.

Noise reduction in the area of development is achieved by implementing a number of organizational and technological solutions, for example, using noise reduction techniques and equipment. Measures to reduce the dynamic action of working machines and mechanisms are being carried out. Sound absorbing screens of reinforced concrete, wood, reinforced glass or plastic are installed. Modern soundproofing materials are used.

The environmental issue must be resolved. Issues of emission of fine dust particles into the atmosphere are solved. Harmful emissions into the atmosphere are reduced by delivering the maximum number of pre-painted products and equipment to the construction and carrying out other activities, possibly carried out outside the construction site. A clear system for collecting and exporting construction and household debris from the facility under construction is being organized. Water runoff is organized from the construction site at the preparatory stage. Schemes of competent movement of transport around the construction site for the period of construction are being developed. The schemes in the structure of the construction plan will be coordinated with the traffic safety authorities.

Findings:

Construction in the conditions of dense urban development should not only ensure the quality and durability of erected buildings and structures, but oblige to fulfill a number of conditions to ensure a stable equilibrium and preserve the operational properties of the surrounding buildings, as well as to preserve the convenience of living for residents of existing buildings and structures.

References:

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