

BUILDING CONSTRUCTION, BUILDINGS AND STRUCTURES

REVIEWING AND ANALYSIS OF CONSTRUCTION-TECHNICAL EXPERTISE

G. D. Shmelev

Annotation. The article reviews the issue of reviewing and analyzing the materials of pre-trial construction and technical expertise. Shown identified during the consideration of exceptions to the requirements of the legislative acts and normative technical documents in force in the field of construction and housing and communal services of the Russian Federation. The analysis of the legal and regulatory framework used in the study methodological approach and key answers conducted.

Keywords: construction and technical expertise; review; methodical approach; waterproofing; current and major repairs.

ENGINEERING SYSTEMS AND COMMUNICATIONS

COMPARATIVE ANALYSIS OF TECHNICAL CHARACTERISTICS OF CYCLONES

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Annotation. The article analyzes the existing designs of cyclone dust collectors, lists their main advantages in comparison with other devices of a similar purpose. Describes the design features, advantages and disadvantages. The factors affecting the efficiency of the cyclone apparatus are analyzed. Improved designs of cyclones of the CN type are proposed.

Keywords: dedusting; cyclone; Reynolds test; purification degree.

TEST RUN OF LABORATORY INSTALLATION FOR RESEARCH OF ENERGY EFFICIENT VENTILATION DUCT FITTINGS

L. N. Badykova, E. E. Belyaeva, G. A. Gimadieva

Annotation. Test run of laboratory installation for research of ventilation duct fittings was carried out – was done calibration of orifice plate, checking of frictional pressure drop on straight-line section and on local resistance in the form of tee at junction for a wide range of changing air-flow rate, which passes on its branches. It is showed good agreement with previously well-known results and feasibility of installation using for researches of new generation energy efficient ventilation duct fittings.

Keywords: experimental researches; test run of laboratory installation; pressure losses measurement; local resistance; ventilation fittings; tee; bending; side orifice.

STATEMENT OF THE PROBLEM OF MODELING THE RECOVERY OF HEAT AND GAS SUPPLY SYSTEMS AT ACCIDENTS

A. I. Kolosov, A. R. Makarov

Annotation. The authors analyzed statistical data of damage and periodicity of natural and man-made disasters. It is established that at the moment the process of restoration of heat and gas supply systems in case of accidents is unsystematic. The necessity of constructing probabilistic models of the decision-making process for restoration of objects of heat and gas supply systems in the event of emergency situations is substantiated. A method is proposed for selecting the option of restoring heat and gas supply systems in emergency situations under various types of external influences, which makes it possible to avoid unnecessary material costs.

Keywords: heat and gas supply; emergencies; group failure; mathematical model; technological disaster.

INNOVATIVE APPROACH TO METHODS OF MODELING WATER SYSTEMS

E. Y. Okolelova, M. A. Shibaeva, N. I. Trukhina

Annotation. The authors consider the approach to calculation of parameters of engineering systems based on the use of queueing theory. The technique of calculation allows to calculate the optimal parameters of the supply system taking into account the daily consumption, the number of storeys of buildings and other factors. The possibility of reducing the cost of construction of water supply system at the expense of reasonable reduction of the tube diameter.

Keywords: water supply system; housing and utilities; Queuing theory; lower costs.

CITY. RECONSTRUCTION, RESTORATION AND LANDSCAPING

ARCHITECTURAL PLANNING CONCEPTION OF DEVELOPMENT OF THE VORONEZH RESERVOIR TERRITORY AS RECREATION ZONE OF THE CITY

T. V. Mikhailova, E. Y. Grieva, V. D. Fernyuk

Annotation. A study of the modern state of the Voronezh reservoir, revealed a lack of improvement of coastal areas and embankments, a loss of recreational

functions of the studied space. Set objectives for the development and improvement of recreational areas along the reservoir: a variant of the design solution in the right-Bank zone of the reservoir. The scheme of transportation and pedestrian connections designed parkland with other areas of the city.

Keywords: city; water reservoir; recreation; park landscaping; quality of water.

TECHNICAL AND LEGAL ASPECTS OF CONSTRUCTION OF BUILDINGS IN DENSE URBAN ENVIRONMENT

A. A. Mershchiyev, D. V. Lobanov

Annotation. Infill development is inevitable in any major city, and with the rapid growth of go's urban population and seal of urban development, there are many environmental and social problems of the kind whose solution is an urgent task. The article considers the legal aspects of the construction and operation of residential and public buildings in a dense urban environment. The authors analyzed the influence of various factors arising in the process of construction of buildings in dense urban environment on the environmental situation. Proposed measures to clarify and implement the regulatory legal acts concerning infill development in existing compact urban.

Keywords: infill development; urban environment; infrastructure; utilities; dust; noise; construction.

ECOLOGY AND SAFETY OF THE URBAN ENVIRONMENT

ARCHITECTURAL CLIMATIC ANALYSIS OF THE URBAN ENVIRONMENT (ON THE EXAMPLE OF VORONEZH CITY)

E. V. Sazonov, I. V. Popova

Annotation. Architectural analysis of the microclimate of urban development is based on the example of Voronezh city. With the help of the geoinformation analysis the assessment of the urban climate forcing has been assessed, typical micro-climatic zones and climatops corresponding to them have been substracted, according to the results of conducted microclimatic observations, the characteristic of the temperature and humidity conditions of climatops is given. Based on the analysis of the acquired data, general recommendations for the construction and reconstruction of the urban environment are given.

Keywords: microclimate; urban environment; thermal comfort; climatop; geoinformation analysis; temperature-humidity regime.

CONSIDERATION OF THE COMPLEX PARAMETERS IN THE ASSESSMENT OF INDOOR CLIMATE

D. V. Lobanov, V. V. Chechkin

Annotation. Currently, when designing systems for comfort air conditioning room air guided by the normative data of heat production of man, the flow of outside air, thermal comfort and other indicators focused on the so-called «average» person and therefore the «average» level of comfort. In the article the question of comfort with the individual characteristics of the person and presents the proposed method of calculating the «thermal voltage» of the human body.

Keywords: human heat production; comfort; microclimate parameters; heat and mass transfer of a person.

THE STATE OF THE ENVIRONMENT AND ENVIRONMENTAL CONDITIONS OF THE LIFETIME OF THE POPULATION OF THE VORONEZH REGION

**T. V. Shchukina, K. V. Garmonov, M. N. Zerlykina,
B. P. Novoseltsev, A. P. Zverkov**

Annotation. The analysis of the ecological situation of large densely populated areas is carried out on the example of the Voronezh region. The main sources of harmful substances emission and their negative impact on the environment have been determined. Proposed to a comprehensive program to improve the quality of the environment and environmental conditions of life. Possible ways of reducing harmful emissions from motor vehicles are given.

Keywords: harmful substances; environment; industrial effluents; ecological situation; recycling.

THE QUESTION OF FIRE SAFETY OF HIGH-RISE BUILDINGS

I. I. Pereslavl'tseva

Annotation. With the rapid growth of construction in the Russian Federation of high-rise buildings are becoming increasingly relevant question of providing them fire safety measures. The author identifies a number of factors influencing fire hazard high-rise buildings. The main problems that hinder the rapid and safe evacuation of people. Suggested a promising direction for the development of a special design of the outer lift.

Keywords: high-rise building; fire safety; evacuation way; fire-prevention requirements; lift.

ECONOMICS AND ORGANIZATION OF CONSTRUCTION

THE ECONOMIC EFFECT OF AUTOMATION OF INDIVIDUAL HEATING UNIT OF A RESIDENTIAL BUILDING

AT DIFFERENT CONDITIONS OF HEAT CARRIER

S. A. Dementyev, M. N. Zherlykina, M. S. Kononova

Annotation. The results of the comparison of energy saving potential relating to the installation of devices for automatic regulation of individual heating units of buildings, with different parameters of the heat carrier in a heating system, are given. The energy saving effect associated with the elimination of the so-called «discontinuity» of the temperature graph of the central qualitative regulation was estimated. It is shown that the estimated savings are higher, the lower the estimated temperature of the heat carrier.

Keywords: individual heating unit; automatic regulation; the economic effect; discontinuity of the temperature graph.