

Contents

BUILDING AND ARCHITECTURE

ARCHITECTURE, URBAN PLANNING, DESIGN

- E. G. Molotkova.* Architecture and resource management.
The development of the Palace Embankment in the Petrine era 5

BUILDING DESIGNS

- F. A. Glebov, I. V. Astakhov.* N-linear component method
for analyzing the stress-strain state of flange joints
of steel building structures 16

STRUCTURAL MECHANICS AND CALCULATION OF STRUCTURES

- I. V. Kamenev.* Verification of the mathematical model
of the deformed state of cylindrical CLT-panels 25

GEOENGINEERING

- A. V. Kvashuk.* Changes in the mechanical properties of sandy
soils subjected to contamination with petroleum products 33
- V. V. Konyushkov, S. N. Suleymanova.* Consideration
of excessive water saturation of soil in the design of nail slope
support 44

TECHNOLOGY AND ORGANIZATION OF CONSTRUCTION

- V. V. Burchik, N. P. Kuzmich.* Organization of inspection
of buildings and structures for further use 54

SANITARY ENGINEERING AND ECOLOGY

- V. D. Kuzmin, V. P. Verkhoturov, M. A. Sankov.* Modeling
of the ground water infiltration process into sewer pipelines
using the ANSYS CFX software 61

- A. P. Samodolov, D. V. Ulrikh, T. M. Lonzinger, S. E. Denisov.*
Effectiveness of using blast-furnace slag for treatment
of acid effluents of mining and industrial complex enterprises 69

ENERGY SAVING AND ENERGY EFFICIENCY

- Y. A. Golikova, S. V. Kiselyov, L. V. Talipova.* Application
of generative design in the calculation of solar exposure
parameters 77

TRANSPORT

- A. M. Abramov, N. B. Petrov.* “Park-Assistant” — parking
assistance system for a road train 88
- T. B. Bryanskih, A. V. Zedgenizov.* Assessment of the intensity
of individual transport traffic to high rise residential buildings
in the city of Irkutsk 97

Scientific-technical peer reviewed journal

The Founder — the Federal State Budgetary
Educational Institution of Higher Education
“Saint Petersburg State University of Architecture
and Civil Engineering” (SPbGASU)

The Editor-in-Chief

Ye. I. Rybnov, Dr. Sci. Ec., Professor, Honorary
Worker of Higher School of the Russian Federation
(SPSUACE)

Assistants to the Editor-in-Chief

Yu. P. Panibratov, Dr. Sci. Ec., Professor,
Winner of the State Award of the Russian Federation
and the Award of the Government of the Russian
Federation, Honorary Worker of Sciences
of the Russian Federation, Academician of RAACS
(SPbGASU)

E. V. Korolev, Dr. Sci. Tech., Professor, Full member
of the Russian Engineering Academy, Winner
of the Government of the Russian Federation,
Honorary Builder of Russia (SPbGASU)

V. I. Morozov, Dr. Sci. Tech., Professor, Winner
of the Award of the Government of the Russian
Federation (The Senior Editor) (SPbGASU)

Editorial council

A. A. Akaev, Dr., Prof., Foreign Member of the RAS
(Lomonosov Moscow State University, Russia)

L. Ungvari, Dr. Sci., Professor, (Technical University
of Applied Sciences Wildau, Germany)

N. V. Kazhar, Dr. Arch., Professor (Częstochowa
University of Technology, Poland)

G. Kipiani, Dr. Sci. Tech., Professor (Georgian Technical
University, Georgia)

H. V. Tokmajyan, Dr. of Engineering, Professor, Rector
of SUT (Shushi University of Technology, Armenia)

J. Eberhardsteyner, Dr. Sci. Tech., Professor (Vienna
University of Technology, Austria)

S. N. Leonovich, Dr. Sci. Tech., Professor (Belarusian
National Technical University, Belarus)

Y. Iwasaki, Dr. Sci. Tech. (Geo-Research Institute, Japan)

T. Tanaka, Dr. Sci. Tech., Professor
(University of Tokyo, Japan)

A. Zh. Zhusupbekov, Dr. Sci. Tech., Professor
(L. N. Gumilyov Eurasian National University, Astana,
Kazakhstan)

Editorial Board

G. V. Yesaulov, Dr. Arch., Professor, Academician of RAACS

N. I. Karpenko, Dr. Sci. Tech., Professor, Winner
of the Award of the Government of the Russian Federation,
Honorary Worker of Sciences of the Russian Federation,
Academician of RAACS (NIISF RAACS)

L. S. Lyahovich, Dr. Sci. Tech., Professor, Honorary Worker
of Sciences of the Russian Federation, Academician
of RAACS (TSUAB)

V. Sargsyan, Dr. Sci. Tech., Professor
(National University of Architecture and Construction
of Armenia)

V. I. Travush, Dr. Sci. Tech., Professor, Winner of the State
Award of the Russian Federation, Winner of the Award
of the Government of the Russian Federation, Academician
of RAACS (RAACS)

V. S. Fedorov, Dr. Sci. Tech., Professor, Academician
of RAACS (MSURE)

S. V. Fedosov, Dr. Sci. Tech., Professor, Winner
of the Award of the Government of the Russian Federation,
Honorary Worker of Sciences of the Russian Federation,
Academician of RAACS (IVGPU)

M. I. Alekseev, Dr. Sci. Tech., Professor, Winner
of the Award of the Government of the Russian Federation,
Honorary Worker of Sciences of the Russian Federation,
Academician of RAACS

G. I. Belyy, Dr. Sci. Tech., Professor, Honorary Worker of Sciences of the Russian Federation
 B. G. Vager, Dr. Sci. Phys.-Math., Professor, Honorary Worker of Higher School of the Russian Federation
 E. R. Vozniak, Dr. Arch., Professor
 T. A. Datsiuk, Dr. Sci. Tech., Professor
 B. N. Karpov, Dr. Sci. Tech., Professor
 L. N. Kondrat'eva, Dr. Sci. Tech., Professor
 L. P. Lavrov, Dr. Arch., Professor, Honorary Architect of the Russian Federation, Correspondent Member of RAACS
 R. A. Mangushev, Dr. Sci. Tech., Professor, Honorary Worker of the Higher School of the Russian Federation, Correspondent Member of RAACS
 A. M. Maslemnikov, Dr. Sci. Tech., Professor, Honorary Worker of Sciences of the Russian Federation
 Yu. V. Puharenko, Dr. Sci. Tech., Professor, Winner of the Award of the Government of the Russian Federation, Correspondent Member of RAACS
 S. V. Sementsov, Dr. Arch., Professor
 V. M. Ulyasheva, Dr. Sci. Tech., Professor
 S. A. Evtukov, Dr. Sci. Tech., Professor, Honorary Worker of Higher School of the Russian Federation
 P. A. Kravchenko, Dr. Sci. Tech., Professor, Honorary Worker of the Higher School of the Russian Federation
 V. N. Dobromirov, Dr. Sci. Tech., Professor
 Ju. G. Kotikov, Dr. Sci. Tech., Professor
 A. E. Pushkarev, Dr. Sci. Tech., Professor
 A. A. Kapustin, Dr. Sci. Tech., Professor
 R. N. Safiullin, Dr. Sci. Tech., Associate Professor (SPbGASU)
 V. S. Lukinskiy, Dr. Sci. Tech., Professor (HSE in St. Petersburg)
 V. N. Lozhkin, Dr. Sci. Tech., Professor, Honorary Worker of Sciences of the Russian Federation (Saint-Petersburg University of State Fire Service of EMERCOM of Russia)
 A. N. Asaul, Dr. Sci. Ec., Professor, Honorary Builder of the Russian Federation, Honorary Worker of Sciences of the Russian Federation
 I. V. Drozdova, Dr. Sci. Ec., Professor
 V. A. Koshcheev, Dr. Sci. Ec., Associate Professor
 G. F. Tokunova, Dr. Sci. Ec., Professor
 N. G. Pletneva, Dr. Sci. Ec., Professor
 A. I. Solodkiy, Dr. Sci. Ec., Professor
 V. V. Asaul, Dr. Sci. Ec., Professor
 E. G. Guzhva, Dr. Sci. Ec., Professor (SPbGASU)
 G. F. Shcherbina, Dr. Sci. Ec., Associate Professor CEO (AO SSMO "LenSpetsSMU")
 L. M. Kaplan, Dr. Sci. Ec., Professor (St. Petersburg Union of Construction Companies)
 A. A. Rudenko, Dr. Sci. Ec., Professor (MAL)
 R. A. Faltinskiy, Dr. Sci. Ec., Professor (JSC «Lenenergo»)
 The address of the Founder and the Editorial Office:
 2nd Krasnoarmeyskaya St. 4, 190005, St. Petersburg, Russia
 Ph./ Fax: (812) 316-49-06
 E-mail: vestnikspb@mail.ru
 The contents and abstracts of articles are presented on the site: <http://vestnik.spbgasu.ru>
 The journal is registered by the Federal Service for Supervision of Communications, Information Technology and Mass Media (Roskomnadzor). The registration certificate of the mass media organization is ПИ № ФС77-69753, of 05.05.2017.
 The journal is included by the Higher Attestation Commission (HAC) of the Russian Federation into the List of leading reviewed scientific journals and editions in which the major scientific results of theses on competition for the academic degree of the Doctor of Science are to be published.
 In case of reprinting, the link to the "Vestnik grazhdanskikh inzhenerov – Bulletin of Civil Engineers" is obligatory.
 On the cover one can see the monument to Nicholas I, the Emperor, in honour of whom the Institute of Civil Engineers (nowadays SPbGASU) was named on December 17, 1892.

E. V. Golov, Y. V. Vasiliev, S. A. Evtukov, V. R. Shpet.
 Formalization of the heat map chart of differentiated stiffness of the motor vehicle's body according to the grid principle 105
 D. A. Zakharov. Spatial unevenness of the transport demand distribution for movement by private and public traffic transportation in the districts of the city of Tyumen..... 114
 P. A. Razumov. Technology for the use of liquefied petroleum gas as the main type of fuel for engines operating on the diesel cycle..... 123
 S. D. Rasskazov. Substantiation of the need of improving the methodology of training and evaluation of road transport specialists..... 131

ECONOMICS

S. A. Ershova, T. N. Orlovskaya. Study of the level of provision of the Russian megacities' population of with green construction facilities..... 138
 Abstracts..... 149
 Submitting materials requirements..... 158
 Subscription rules 159