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Abstracts
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Mariusz ADAMSKI
Example of the thermal modelling of the buildings

In this study selected results of modeling of the heat transfer phenomena from designed building to the environment are presented. Noncommercial software Heed was used.

Andrzej AUGUSEWICZ, Tomasz BREŃKO,
Agnieszka KOZŁOWSKA, Rafał MIŁASZEWSKI, Beata KAROLINCZAK,
Anna WERNER-JUSZCZUK, Przemysław WINIAREK
Economic aspects of environmental protection

Specialists employed in the environmental engineering sector need to have knowledge and skills in the area of environmental protection economics. The paper discusses fundamental issues of environmental protection economics which engineers need during cooperation with economists on development of economic analysis for environmental protection investment projects. These issues estimation of losses caused by environmental pollution, directions and objectives of the state environmental policy and economic instruments used in environmental protection, cost of environmental protection and sources of funding as well as methods for economic effectiveness of environmental protection investment projects. Special attention is focused on the costs of environmental protection and their funding from European Union funds.

Krzysztof FALKOWSKI
Technology of material and structural protection of cement concrete in aggressive environment

The sustainability of the construction made of high-strength cement concrete in specific operating conditions (display classes) mainly depends on concrete resistance on aggressive environmental effects. The research carried out by the author of the paper confirms that modification of concrete microstructure by applying admixture of asphalt pastes by means of special concrete concentration methods provides efficient protection. At the same time the content of asphalt paste in relation to the weight of cement decreases. The porosity structure system that was obtained in examined concrete allows receive lower impregnability and higher frost resistance and makes concrete virtually impervious to chloride ions.

Katarzyna GŁADYSZEWSKA-FIEDORUK
Indoor air quality in a typical kindergarten in Białystok

Formal education usually begins in kindergarten. Children spend five to ten hours a day there, so indoor air quality is of paramount importance. Natural ventilation (or to be more precise gravitational channel ventilation system) is by far the most common ventilation method in kindergartens; its efficiency is enhanced by airing the premises from time to time. In the kindergarten in question, carbon dioxide concentration in the morning does not exceed the permissible level. In the afternoon, however, this level is considerably exceeded (by as much as 97%). Temperature and humidity stay within the acceptable range of values. Thanks to unsealing or opening the windows, outdoor air penetrates into the rooms, which boosts the functioning of the gravitational ventilation system thus improving indoor air quality.

Michał GOLAŃSKI
Selection of building materials in the context of energy efficiency and environmental impact

Almost all the building materials are processed before application on construction site. This is inevitably connected with waste of energy and production wastes. The introduction of the estimation of building materials by means of ′eco-costs′ can revolutionize our approach to construction products. The ecological cost of the building materials will become an important evaluation criteria, a tool making possible the optimization of solutions with the regard of the long-term analysis of the influence of the building on the environment. An architect can fundamentally decide about level of primitive energy of building across specification of building materials.

Jolanta HARASYMIUK, Zdzisław KOWALCZYK
Environmental requirements in the preparation of construction works

Paper presents an overview of the major environmental requirements in the preparation of construction works. Included in the paper the standard sequence of preparatory activities takes into consideration environmental documentation and could be for the investor a clue during preparation of his algorithm in a particular case.

Jolanta Anna PRUSIEL, Andrzej ŁAPKO
Method of thermal deformability evaluation of organic granular media stored in silos

The paper presents a conception of measuring stand and testing procedure for evaluation of thermal expansion coefficient of organic granular media stored in silos under real consolidation stress state in grain. This problem is particularly important in organics solids where the biological process of self heating could occur. Theoretical assumptions of proposed experimental method are given. The measurements should be conducted in model silo chamber equipped with surcharge rigid steel plate consolidating the grains and with centrally located core that enables heating the grains. The described method was registered as the Patent Claim.

Mariola WASIL
Influence of selected factors on hydraulic conductivity of fly ash

Hydraulic conductivity is one of the parameters which are used to determine usefulness of fly ash to earth structures. The paper presents the influence of some factors on value of permeability, such as: water-saturation, the addition of cement in the sample, hydraulic gradient and effective stress. The samples were compacted at optimum moisture content by means of Proctor's method. Research was carried out in Rowe's consolidation cell. It was found that the smaller water-saturation of fly ash sample, the lower the flow velocity. Higher percentage of cement in the sample affects the decrease of the flow velocity.