

## Abstracts Vol. 3 No. 3

### **Paweł ANTKOWIAK**

#### *Professional self-government of civil engineers in the opinion of its members*

Professional self-government of civil engineers plays a major role in representing interests of some specified groups and public administration in Poland. There have been more and more doubts about the legitimacy of the existence of such structures and their functioning in the public sphere, recently professional self-government has been harshly criticized in Poland by society and its members. For this reason, in agreement with The Polish Chamber of Civil Engineers Author conducted a series of surveys, with aim was to answer the question: "What is the real assessment of the functioning of the professional self-government of civil engineers by its members?". The paper represents the results of the research.

### **Katarzyna GŁADYSZEWSKA-FIEDORUK**

#### *Correlation of humidity and CO<sub>2</sub> concentration in kindergartens*

Kindergarten is an institution in which children commence their education process, and the education has a group character. As far as the quality of indoor air is concerned, kindergartens have been often neglected. In countries all over the world there are kindergartens which make use of different kinds of natural ventilation, and do not possess any mechanical ventilation systems. The research presented in this study was conducted in three kindergartens which varied in terms of their exterior wall insulation. The three considered objects were localised in eastern Europe, in the temperate zone. Relying on the obtained measurement results, analysis of correlation between humidity and CO<sub>2</sub> concentration could be conducted. Nearly complete correlation was observed in 61% of the measurements. This fact may constitute a solid basis for the control of natural ventilation.

### **Andrzej PLEWA**

#### *The influence of compaction ratio on stiffness modulus of asphalt concrete*

Technological errors of inadequate compaction of asphalt layers are often a major cause of premature degradation of the road surface. It creates a need for continuous improvement of technology incorporation of asphalt mixes. The aim can be achieved through the use of available achievements in the field of asphalt mix rheology, as well as through the advancement of knowledge in the field of road technology. This paper presents the research results and analysis of the impact of asphalt concrete (AC) compaction on the stiffness modulus IT-CY value. An attempt was made to determine the correlation between the compaction ratio and the parameters by volume and stiffness modulus of asphalt concrete AC16P based on unmodified bitumen 35/50 and modified bitumen PMB25/55-60.

### **Hubert SIKORA, Wojciech PIASTA**

#### *Rheology of air entrained concretes and cements with mineral additives*

The studies were carried out to find the effect of air entrainment and blended cements on rheological deformations of concretes. The cements used were ordinary Portland cement and two blended Portland cements containing: blast furnace granulated slag-fly ash blend and limestone powder. It was stated that air entrainment results in lowering of shrinkage and swelling of concretes made of OPC and blast furnace granulated slag-fly ash blend cement. The increase in both deformations of air entrained concrete occurs when the limestone cement is used. The linear dimension changes was measured with Amsler's apparatus, according to the Polish standard PN-B-06714-23:1984, using 6 samples of each concrete with dimensions 10×10×50 cm, equipped with steel pins cemented in the both ends of the beams. The first measurement was made after 24 hours from concrete beams preparation.

### **Robert STACHNIEWICZ**

#### *Heat demand for building heating and outside walls dampness*

This paper analyses the influence of external walls dampness for single-family house on the final energy. For the analysis two variants of damp walls were assumed: immediately after construction and after five years of exploitation of the building.

**Elżbieta WOŁEJKO***Deterioration of natural building stones by microorganisms*

The article reviews the literature on the role of micro-organisms taking an active part in the biodeterioration of natural stones. From the beginning natural stones are subject to weather conditions that cause both physical and chemical weathering of rocks accelerate biological destruction of stones the stability of the rock matrix making them more susceptible to microbial attack. Colonization of natural stones by microorganisms with the formation of a biofilm is initiated by pioneer species that to exchange they are with more complex assemblies with time. Microorganisms living on stones find many elements necessary for their metabolism, causing significant changes on the surfaces of buildings and monuments made of natural stone, including multicolored stains and deposits forming a crust.