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PERCEPTION OF VIEW – HOW TO DEVELOP SPATIAL IMAGINATION – CONTINUUM

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The concept of design work, presented in the article and undertaken in the course of „Engineering Graphics” conducted for the students of Environmental Protection course at the Faculty of Power and Environmental Engineering of the Silesian University of Technology, is a continuation of studies related to the analysis of the role and importance of the physical model in teaching subjects referring to spatial imagination, such as „Engineering Graphics”, „Geometry” and „Engineering Geometry”. The authors based legitimacy of introducing a physical model to teaching of „Engineering Graphics” on one of the oldest teaching principles – the principle of direct vividness, formulated in the nineteenth century by Pestalozzi. [1]

The design task implemented in the academic year 2012/2013 is an extension of the idea of basing the teaching of „Engineering Graphics” in certain justified cases resulting from, among others, the specific field of study or particular needs of students, mainly on design tasks directly referring to direct vividness. This exercise was divided into three main stages:

1. construction of a model with a number of ready-made polyhedral forms,
2. mapping of the model in parallel plan,
3. mapping of the model in rectangular plan.

Drawing part of the task was performed as a freehand drawing and design drawing. Similar to the design task presented in a paper delivered at the 19th CGGC 2012 conference in Ustroń, the task completed in 2013, in the view of the authors fully met the demand of direct vividness. [2] [3] Composing their own spatial structures with ready-made polyhedral forms, students were able to make multiple observations of the model. Practical use of a central plan in the form of digital images made by students, presenting the previously constructed models, to create their own inventory records of works performed, became significant and very important in the context of further research part of the design task.

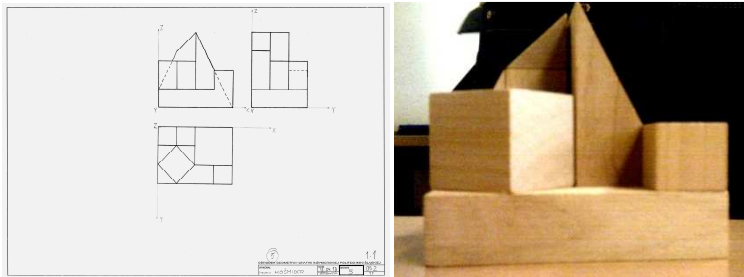


Fig.1,2 – model map ping In orthogonal projection, model structure – work of a student

Bibliography:

1. Sroka-Bizoń Monika, Terczyńska Ewa: *Percepcja widzenia. Jak kształtować wyobraźnię przestrzenną* [Perception of View – How to Develop Spatial Imagination]. Proceedings of 19th Conference Geometry Graphics Computer, CGGC, Ustroń 2012.
2. Suchodolski B.: *Zarys pedagogiki* [An Outline of Pedagogy], PWN, Warszawa 1965.
3. Urbańczyk F.: *Zasady nauczania matematyki* [The Principles of Teaching Mathematics], PZWSZ 1960.