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GOMETRICAL ASPECTS OF SHELL SHAPING USED IN SPECJALIST COURSE AUTOCAD

Key Words*: geometrical shaping, steel covers, structural shells*

Specialist course: „ AutoCAD" is conducted for students of Faculty of Building and Environmental Engineering at the Rzeszów University of Technology. It lasts 20 hours.

Preparing students for using the program AutoCAD as tool for creating engineering objects is a purpose of classes which the author put for himself. He established, that passing the optional course AutoCAD is tantamount to acquiring by the student of basic abilities necessary for making the technical projects made in frameworks of different objects of studies or in engineering and master's theses.

The fundamental part of classes regards ways of performing flat drawings and bases of spatial shaping with using geometrical solids and surfaces. The author uses subspaces of the virtual and three-dimensional AutoCAD's space like points, straight lines, plains and relations: metrical and non-metrical occurring between these subspaces for appointing nodes, edges, faces of plane and spatial figures, as well as of forming lines of geometrical shells.

Students independently exercise planimetric structures of the profile of the two-branched pillar – work number 1.

They personally train creating structures of solids and surfaces and their mutual placing in the three-dimensional space to build: geometrical model of the two-branched pillar and geometrical model of the structural system of the hall and its space cover. [1], Fig. 1.

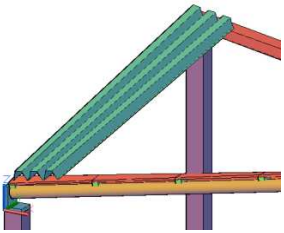

Fig. 1. Geometrical shaping of the hall and its space cover made up of the unidirectional folded steel sheets

For the reason of the reduced number of hours the last part of classes is led in the form of presentation by the author. He discusses creating conceptual drawings on the example of single and compound folded shells [2, 3, 4] and their geometrical models. Next, parametric shaping is used for building the models of the steel, flat sheets transformed, in the diversified way, to spatial forms as a result of the assembly to the directrices of the shell.

References:

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