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SKEW AND VERTICAL PERSPECTIVE – MULTIMEDIA LECTURES FOR THE STUDENTS AT THE FACULTY OF ARCHITECTURE.

The subject of Descriptive Geometry at the Faculty of Architecture of the Silesian University of Technology is realized as 2 hour of lecture and 2 hours of designing classes a week and covers only first semesters of studies.

The syllabus of the introductory part of the first semester covers the following issues: Monge's projections, parallel projection – axonometry, designing roof structures of building objects i.e. roofs of flat expanses, roof structures in a form of slanting surfaces – Catalan's structures and the method of marked projection.

The syllabus of the second part of the first semester focuses on the issues connected with central projection. Having discussed the rules of that kind of transformation a presentation of the methods of drawing slanting perspective of skew elements of Euclidean space follows. Next there is presentation on skew and vertical perspective of objects based on orthogonal projection.

As a result of a tendency, which has appeared in the recent years, to reduce a number of classes for subjects connected with descriptive geometry and engineering graphics in the curricula of studies at technical universities, a set of lectures in a form of multimedia has been elaborated. It should be noticed that a lecture is given for all students' groups at the same time (120 students), which demands a big assembly hall with not always comfortable seats for listening and watching. However, multimedia presentation with good sound system and much bigger screen than a board overcome the problem.

Undoubtedly, there is a need to modify the methods of teaching so that in a possibly shortest time students get the greatest amount of knowledge necessary to solve engineering problems. At the same time, limits concerning students' perception should not be forgotten.

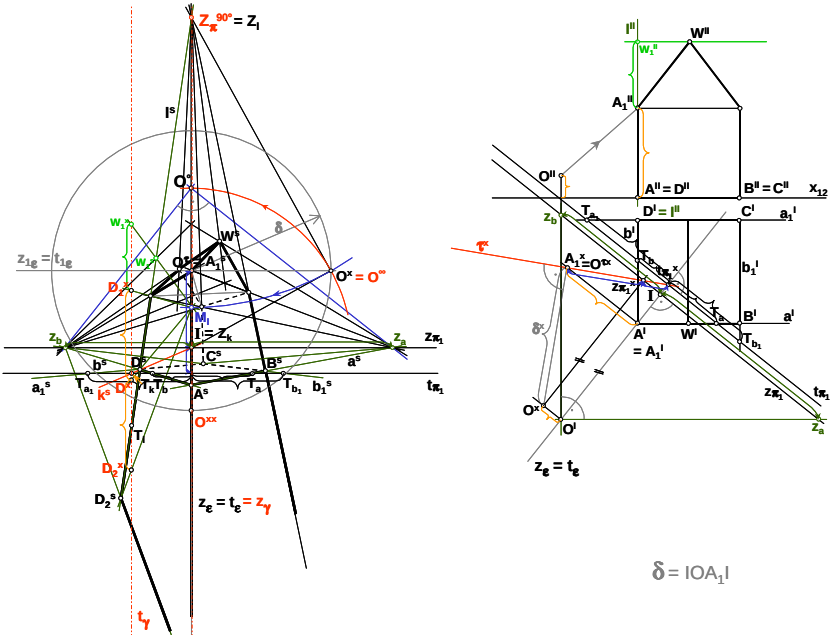

Fig. Slanting perspective a given object by means of orthogonal projection from a low eye.

Therefore, the scope of curriculum realized in a traditional way has been diminished to an absolute minimum including basic transformations, in the method of orthogonal projection and axonometry (first part of semester), giving a possibility of practical things for future architects i.e. the methods of creating perspective of objects in the second part of semester.

The paper presents examples of lectures, 45 minutes each, realized at the second part of semester. Hence, the lectures include topics connected with presentation of issues concerning central projection a well as construction of skew and vertical projection.

The lectures have been elaborated in a form of electronic presentation in Power Point. They do not include oral text but in a 'step by step' way show the creation of a given design. It allows gradual acquisition of skill of making a design of the drawings presented by a lecturer. The lectures are accompanied by a commentary which allows direct contact between a lecturer and a student which leads to a kind of habit of using specialized language by a student.

To sum up it should be stated that in order to present as much context as possible it is necessary to use available means of communication. Introduction of multimedia techniques into didactics enables passing on more information in a more easily understood and more attractive, in students' opinion, way than in a traditional one. It results in next demand which pre-preparation of

didactic materials for notes taking. Students are given prepared ‘outlines’ before a lecture with a possibility of filling them in during lectures.

The next step is to put the checking contents on the platform for distance education.

Labor input and time needed for preparation of lecture in computer system is compensated by the easiness of their carrying as well the possibility of multi-usage. Moreover, electronic solving of tasks allows more effective use of lecture time with smaller and smaller number of hours.

Keywords: descriptive geometry, perspective, multimedia presentation, didactic solutions.