

Constructions Department, Faculty of Architecture, University of Architecture, Civil Engineering and Geodesy, Sofia, Bulgaria

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The University of Architecture, Civil engineering and Geodesy in Sofia incorporates five Faculties – Architecture, Structural Engineering, Hydrotechnics, Geodesy and Transportation Engineering with thirty three departments.

UASG is not the only one civil institution in the country offering higher education for architects and engineers, but it is the traditional one.

The duration of Architecture study, including the time of preparing diploma thesis is eleven semesters. The number of students is approximately 720 – about 120 each academic year.

The department "Constructions" has specialized teachers in education of contemporary building technologies, materials and structures.

The number of students in the Department "Constructions" is 36 in the 10th semester and the same number prepare their diploma in this department in the 11th semester.



The Teaching of Construction and the New Materials and Techniques

The main tendency in the Education of Constructions is: to provoke students to make maximum realistic projects, closely connected with the reality – from the situation to the details by using new materials and techniques. In these projects the construction is not only structural bearing system, but also a form creative factor. It is closely connected with the characteristics of new materials and the specific methods of their application. This tendency was imposed from the rapid development of Contemporary Architecture, New Technologies and New Materials.

The Education program has two very important sites, which give the specific image and quality of the Department - excellent educational methods and teachers team - the most famous practitioners - architects with a great number of realized projects. Only in this way can be guaranteed the quality of education in Construction and also can be successfully prepared students for their future practical work. Students want to have teachers who are famous and well known architects.

The education in the Department "Constructions" is divided in to three main parts – **Housing Construction (part I)**, **Architectural structures (part II)**, **Special architectural structures, materials and techniques (part III)**. Each of them is a kind of level in the education program. The direction in the education is - to establish a strong fundamental knowledge about old and traditional structures and then to present new materials and techniques in comparison with the first ones. Only in this way is possible for students to understand the positive characteristics of the innovations in Architecture and building methods.

Housing Construction includes second, third and fourth semesters. It is divided in lectures and two architectural projects. It marks the beginning of the education in Constructions.

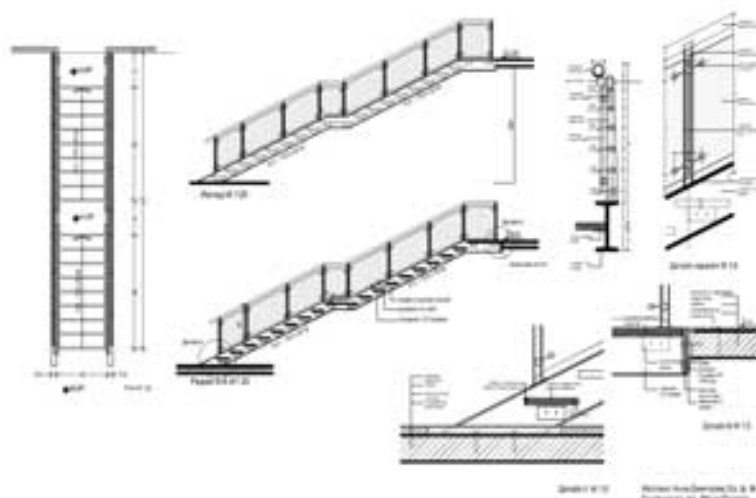
I part Housing Construction

- **Lectures** are fundamental for the constructions. They give the most important knowledge which is as a base for the accepting new materials and building methods. There are some historical pats for old building methods.
- **Project 1** includes three projects - three variants of a little two-storey building with different bearing structures (monolithic skeleton reinforced concrete structure, bearing walls, timber or steel skeleton). The aim is to admit construction as a form creative factor and to make the connection between the main bearing structure and the other elements like walls, floors, roofs and their specifics. In this part students make models of the structures of each of the variant. In these projects students use for the first time new materials for walls, roofs, isolations.
- **Project 2** includes four projects of details- staircases, wood roofs, windows and doors. The aim is to obtain a specific knowledge about architectural structures and designing architectural details.
- **Engineering disciplines** also are included here. These are **Structural mechanics** (part I, II); **Physics**; **Building materials**.

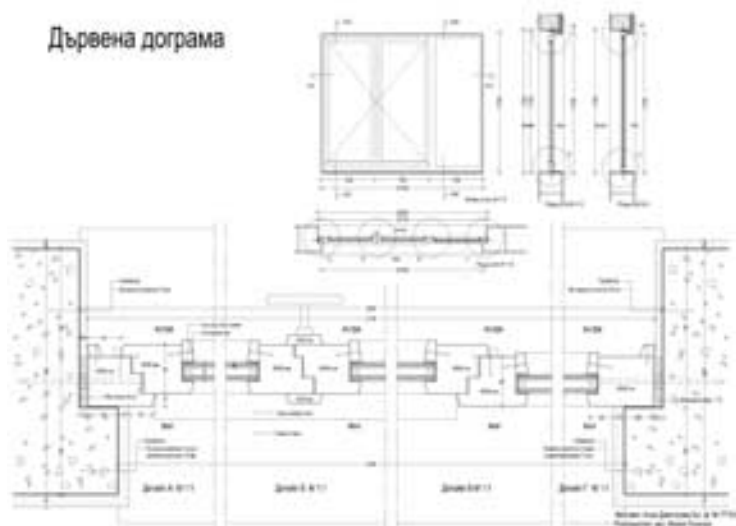
Микропоземна крубопоземна стени



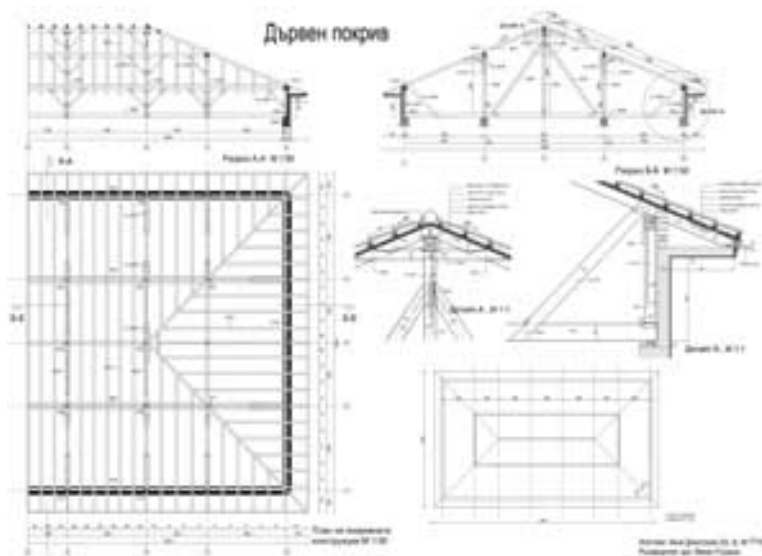
Интериорна стълба



Дървена дограма



Дървен покрив

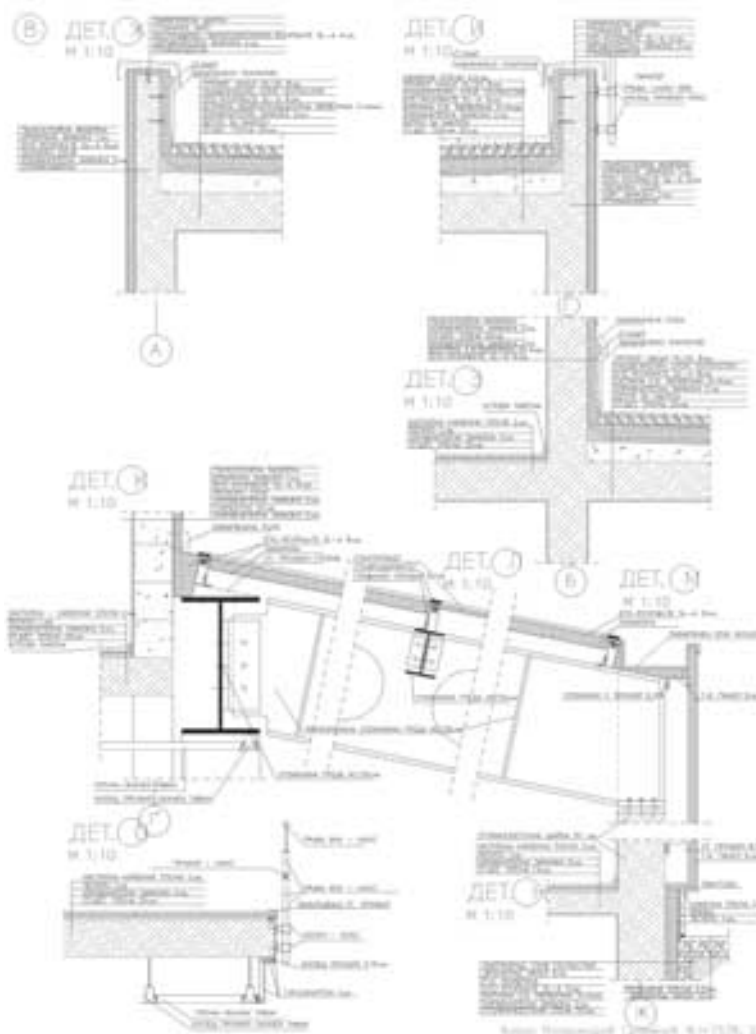


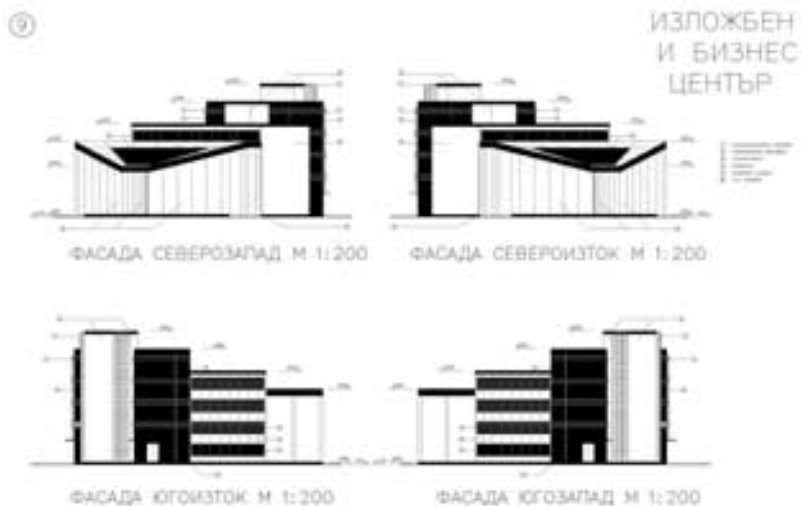
Architectural structures is in fifth and sixth semesters and includes lectures and projects.

- The **lectures** in this part are fundamental for the main structural systems and constructions for the high multi-storey buildings and halls. Mainly the examples are given from the Contemporary Architecture in Bulgaria and in the World.
- **Two projects** are prepared in this part. The aim is to make a complex of competences and skills for making a real working project with details.
- **Engineering disciplines** also are included here. These are **Reinforce concrete structure, Steel** and **timber structures**.

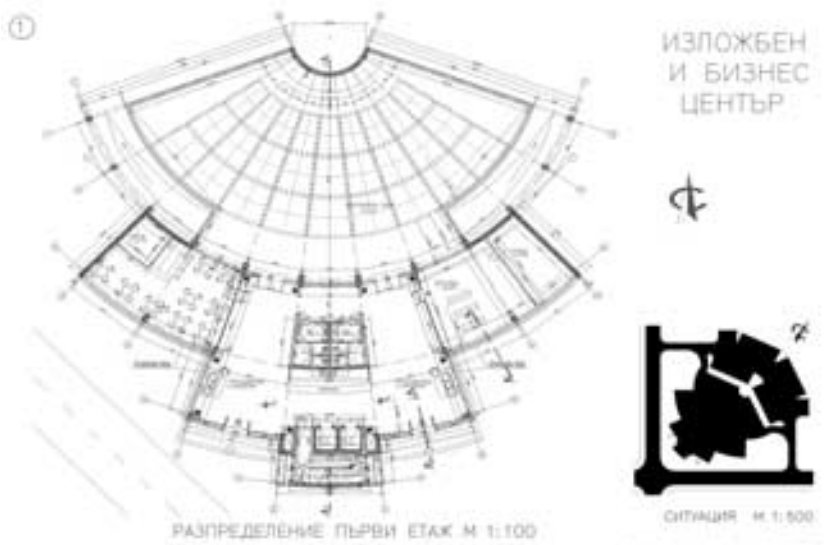
In this part is given more information about new materials and techniques. The projects are bigger than in the first part and at this level students are taught how to use industrial details and other firm products - how to adapt these new products to a building and how it will reflect to the image of the building. Students make specific parts of the buildings with details. This gives them practical skills and possibilities to reflect very fast in the real situation in their future architectural practice.

II part Architectural Structures

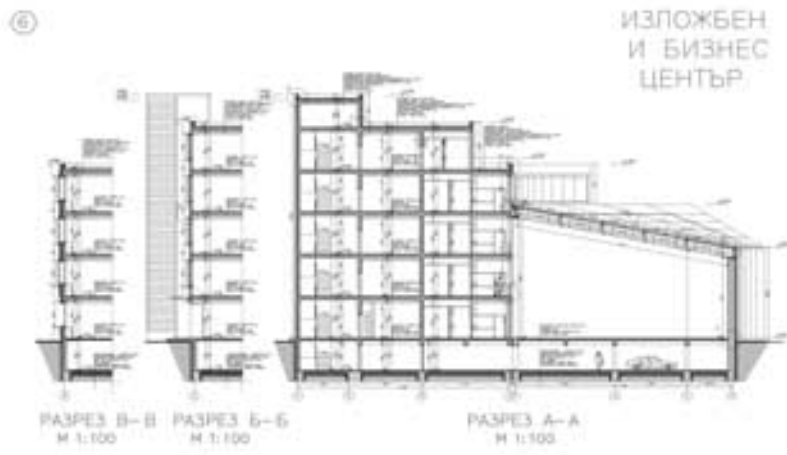




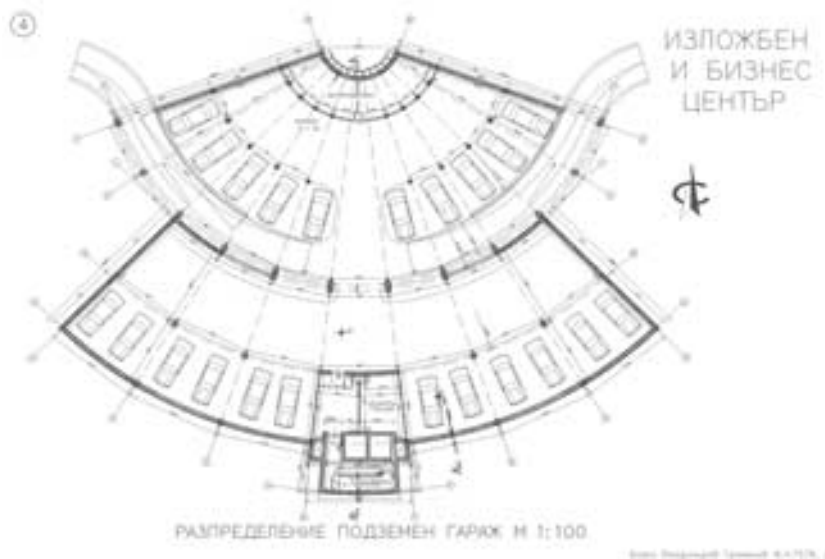
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Special Architectural structures, materials and techniques includes the education in the ninth and tenth semesters. There are some specialized disciplines in lectures and three pre diploma projects.

- **Special course in reconstruction** makes a connection between traditional construction in Bulgaria and the new building materials and techniques. Some questions are put here about how to use new materials without losing the originality of the old buildings, how to adapt the building to the new conditions and other questions.
- **Special course in new technologies** is taking place here. This is the culmination point in presenting new materials, building methods and techniques. We invite foreign tutors for different lectures. They are representatives of some of the well known building companies as: "Shoko", "Ytong", "Knauf", "Allumil" and s.o.

This last part of the education makes the connection between all the topics mentioned on the conference: Construction and Contemporary Architecture, Construction and new materials and techniques, Construction and the regional building traditions, Constructions and environment.

- **Three projects** are made through this period. The first two are in the phase - idea projects, but the last is technical working project with details. These projects are very interesting for the students because they treat the connection between new technologies, materials and bearing structure and are realistically made.

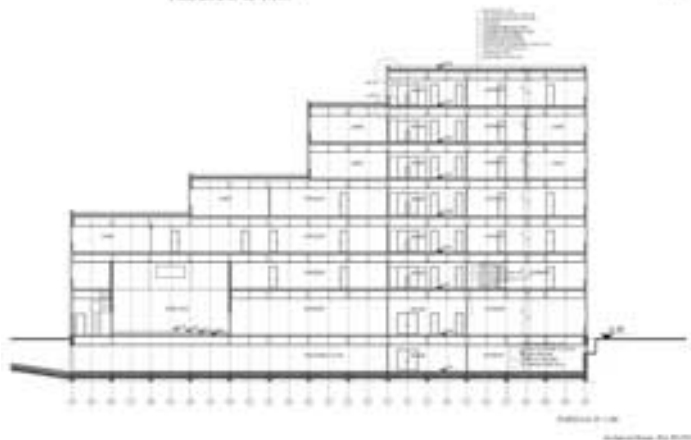
Innovations in the work of the Department are:

- **New information centre** collects all the information for the student's projects - catalogues, models, previous student's projects, CD information and details of industrial products, guide books for preparing student's projects.

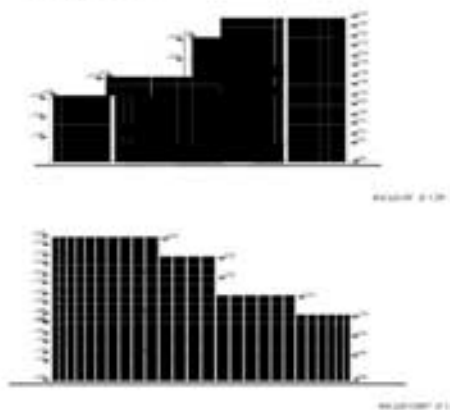
III part Special Architectural Structures, Materials and Techniques

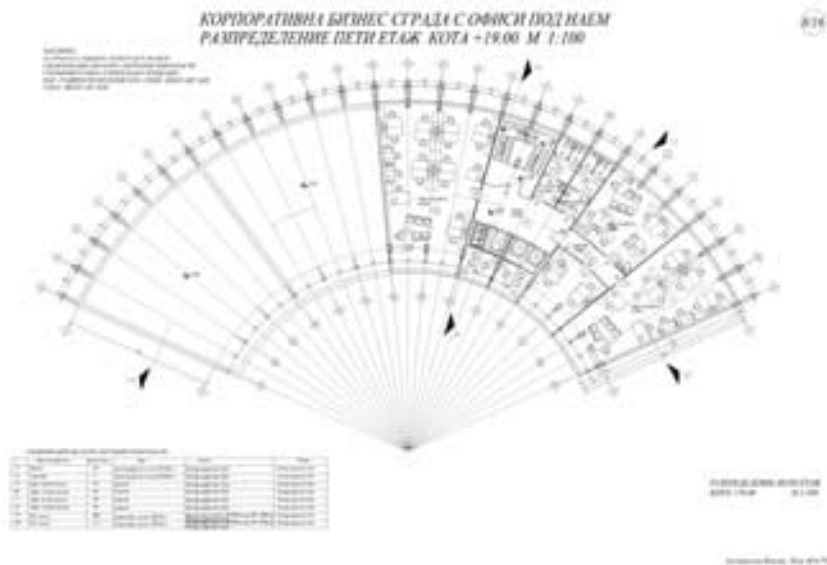


КЪРПОРАТИВНИ БИРНИЦ ЦЪРКЛИ С ОДНОВ ДЪЛЪ НАЕМ
 ПАРКЕТ 1:100



КЪРПОРАТИВНИ БИРНИЦ ЦЪРКЛИ С ОДНОВ ДЪЛЪ НАЕМ
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- **Professional magazine "Detail"** is edited by our teachers and there is a lot of information about new materials and techniques.
- **Film projections from "Discovery channel"** are taking place in the Department in order to describe some important structural decisions in Contemporary Architecture.
- **Practical knowledge is obtained during the student's trip** every summer where students visit the latest interesting and famous buildings in Bulgaria and meet the architects and engineers who made these projects.

- A great number of students study for their diploma in the Department
- All of the students who graduate our Department work as practitioners in Bulgaria or in great number of foreign countries
- A lot of students give international and national prizes in modern and contemporary architecture

Results of our Education