

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

National aviation university

**ARCHITECTURE
OF BUILDINGS AND STRUCTURES
OF CIVIL AVIATION**

Methodical instructions on a course paper
for the students of speciality
7.092101 " Industrial and civil construction "

Kiev 2001

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- A 71 Architecture of buildings and structures of civil aviation:
Methodical instructions on performance of a course paper /
Compliers: L.I. Krivelyov, V.A. Simonenko. I.A. Dmitruk.
– K.:NAU, 2001. – 40 p.

It contains recommendations on development of the main
constructive elements of a building and additional
information necessary for carrying out a course paper.
Intended for the third year students of speciality 7.092101
“Industrial and civil construction”.

- A 71 Архітектура будинків і споруд цивільної авіації:
Методичні вказівки до виконання курсової роботи (анг-
лійською мовою) / Уклад.: Л.І. Кривельов, В.А. Симоненко,
І.А. Дмитрук. – К.: НАУ, 2001. – 40 с.

Містять рекомендації по розробці основних
конструктивних елементів будинку і додаткові
відомості, необхідні для виконання курсової роботи.

Призначені для студентів третього курсу спеціальності
7.092101 “Промислове та цивільне будівництво”, які
навчаються англійською мовою.

BLANKET METHODOICAL INSTRUCTIONS

The volume of studies on course «Architecture of buildings and structures of civil aviation» is determined by the educational plan of specialities 7.092101.02 «Industrial and civil construction» and 7.092105 «Construction and operation of highways and aerodromes» and program approved 24.04.1997. According to the educational plan, the students are to learn a theoretical course, carry out practical studies, a course paper and course project, to take an examination.

The theoretical course consists of blanket questions on construction and architecture, and also:

- questions on prospect for the development of building constructions;
- questions on application of a unified modular system of coordination of the sizes in construction;
- questions on standard designing;
- questions on unification and typication of the space-planning and design solutions;
- questions of the architectural - design solutions of parts of a house: bases, walls, floors, partitions, roofs, ladders, windows and doors, which are erected from small-size products - brick, stone, beams and so on, and large-size products - units, panel, frame systems.

Except for the theoretical knowledge, the student is to receive practical skills, which result in being able to develop an architectural part of building designs, to use for this purpose the catalogues of building constructions and products and standard designs of houses of civil aviation.

Course projecting is the most important stage in a young expert's studying a course paper, and then course project, the student practises received knowledge, learns how to apply it practically in designing the particular object. Solving architectural - design tasks involves the student's using the state building norms, building catalogues, documentation of the standard designs, state standards of Ukraine and other normative and reference materials. On the one hand, the student gets accustomed to working on his own under circumstances close to those when designing in design organizations;

and on the other hand – it promotes faster and more qualitative mastering of educational material.

The project is called engineering specifications, which characterize a house, a construction or a complex, which is going to be built. It consists of a pictorial part (drawings), explanatory slip and estimates.

The main task of the architectural graphics (drawings) is making image on paper, giving the fullest representation of an architectural exterior and interior structure of the house, which is under design, of its space-planning composition, application of constructions, materials etc., and also capability of constructing the object according to the drawings.

When projecting one sometimes makes breadboard models, evidently showing an object or a complex, which is under design.

The most important component of a project is drawings, which represent the pictorial image of facades, plans, sectional views and details of a house or construction. Such drawings are designed, as a rule, in orthogonal projections. They should give full representation of the space-planning and design solution of the object and about its exterior.

The explanatory slip comprises the description and substantiations the adopted space-planning and design solutions, necessary strength, heat-technical and other calculations, and also technical and economic indexes of a project.

The estimates are made for defining the cost of construction. On the basis of the estimates planning capital investment, financing the construction and calculations for work done between the customer and the building organization are made. There are estimates on separate objects or kinds of work, and also summary estimates, which determine a total cost of construction.

Making a project is a composite, many-sided process, the major group of specialists of various occupations - technologists, architects, designers, sanitary technicians, electricians, economists and other experts shares.

A project, as a rule, contains the following parts:

- technological;
- architectural - building;

- sanitary - technical;
- electrotechnical;
- organization of construction;
- budget;
- and also some others, for example, project of the general plan of a complex of objects and others.

The purpose of course studies is solving an architectural - building (architectural - design) part without making calculations of constructions. Other parts of the building project are made by the students when studying such disciplines, as «Building constructions», «Organization of construction», «Economy of construction», «Building and repair s technology».

Projecting is usually preceded by prospecting hydro-geological, geodetic and other work, study of lot and collection of necessary data, without which it is impossible to solve problems of designing and construction correctly.

To fulfil course activity such pieces of information are set to the student conditionally in the task for course activity and methodical instructions on its registration. According to the task it is necessary to develop the architectural - design of a two-storeyed building without a cellar with a definite system of carrying fabric. In the task materials of parts of a building are also indicated: bases, walls, partitions, floor, ladders, roofs.

The methodical instructions (indications) contain recommendations on the development of main structural parts of a house and additional reference data, which are necessary for fulfilment of a course paper.

LIST OF THE LITERATURE

1. ТУПОЛЕВ М.С. Конструкции гражданских зданий. - М.: Высш. шк. 1973. - 239 с.
2. ОСИПОВ Л.Г., СЕРБИНОВИЧ П.П., КРАСЕНСКИЙ В.Е. Гражданские и промышленные здания. -М.: Высш. шк. 1981. - 471 с.
3. МАКЛАКОВА Т.Г. Конструкции гражданских зданий. -М.: Высш. шк. 1986. - 132 с.