



Building Constructions 3
BMEEPESA401
Semester 2020/21 Session II.

Lecturer: Lajos Gábor, TAKÁCS PhD

Assistants: Keve Kund, BÁNDI;

Botond, KOVÁCS

Responsible of subject: Lajos Gábor, TAKÁCS PhD

Responsible of course: Katalin, TOLDI

SEMESTER PROJECT TASKS

SUBJECT AND INTENTION OF THE PROJECTS

Purpose of the subject is overall introduction of façade cladding systems of external boundary structures as well as internal and external doors and windows. The acquisition of knowledge and educational practice relating to execution plan documentation used in practice of construction is achieved by overall designing of external boundary structures.

1.a SEMESTER PROJECT: DOOR AND WINDOW SPECIFICATION

Prepare **the specification of all the doors and windows** of the building given by the instructor (suggested project from last semester BC2) on the base of the **specification form** given by the department.

The specification must contain:

- **overview architectural plans** of the building (basement, ground-floor, general floor) in scale 1:200 or with scanning the layout of the previous semester project. All the doors and windows must be provided by specification sign.
Later, in 2nd semester project the solved part of the facade cladding system must also be selected and indicated on these plans.
- **specification sheets** must be prepared for one door or window of each type (general internal door, special internal door, internal entrance door of apartment, external entrance door of staircase, balcony door, external window, garage door – **at least 7 types altogether**) approved by consultant. The specification sheets must contain the quantities, opening directions, performance requirements according to the given building. After product research (suggested „Collection of webpages of manufacturers” by the Department), an **existing product must be selected and named**, using its technical performance parameters that must fulfil individual requirements.

The format of the specification: booklet of A4 or A3 sheets merged together.

Door and window specification sheets can be prepared by computer.

1.b SEMESTER PROJECT: PLAN OF INTERNAL DOORS

The task is selecting the factory-built door or window units/products used in the architectural practice of a multi-residential building, and developing the knowledge of the logical connections. Prepare the execution plan elements – related to the doors and windows, with the façade cladding – of the multi-storey block from former semesters. The determination and adaptation of the applied door, window are the main parts of the task.

The structures can not be same as in the workshop exercises!

Prepare the **plan of internal doors**:

- a general internal door with
 - traditional operation mode (side-hung single or double leaf)
 - up-to-date frame structure (up-to-date plank frame, folding frame, linen metal or other)
 - unique door leaf (special requirements, special construction of the door leaf, glazed, special cover, decoration element, treshold solution etc.)
- a special internal door
 - special operation mode (such as swinging, sliding, folding door, garage door);
 - unique door leaf (special requirements, special construction of the door leaf, glazed, special cover, decoration element, treshold solution etc.)
- an internal entrance door between apartment and staircase or garage.

The **plans of each door** must include:

- **view** (in scale 1:20 or 1:25): representing frame and door leaf with hardware, hinges, handle, frame fixing, treshold solution; with named elements and dimensions.
- **sections**: at least 1 vertical and 1 horizontal section (in scale 1:20 or 1:25) showing adjoining slab and lintel; with named elements and dimensions.
- at least three **details** (head, side and threshold in scale 1:1, 1:2, 1:2,5) with named elements and dimensions, order of layers.

The semester project cannot be completed with CAD.

If the project is completed on tracing paper, sketches must be submitted in as well.

Deadline of 1st semester project: 26.03.2021.
late submission of 1st semester project: 02.04.2021.

SEMESTER PROJECT PRESENTATION on 26.02.2021.

Obligatory content:

- architectural plans (basement, groundfloor, general floor) in 1:200 with specification symbols for all doors and windows
- specification sheets for at least 7 types of doors and windows with selected product after research on the internet. Product name and performance data is required.
- 3 doors selected for further works (1b)

Consultation material must be uploaded to Personal folder in TEAMS BC3 group/ Class Notebook the day before the consultation until 12.00.

80% level of readiness of obligatory content is required for the signature.

2.a SEMESTER PROJECT: PLAN OF FACADE CLADDING

Prepare the execution plan drawings of the elevation cladding of the part of facade - selected by consultant- of the given multi-storey residential building with its external window or balcony door details please! At least two types of claddings must be designed and detailed: a lightweight (metal, cement fibre, wood, composite sheet, ceramic cladding systems etc.) and a heavyweight (brick, natural or artificial stone, concrete claddings etc.) type.

They can be designed on facade surfaces of adjoining elevations or on the same elevation. The selected facade part is suggested not to contain balcony, loggia or terrace (in the scope of next semester)- please use french balcony instead.

Materials of facade claddings and windows, type of shading systems are defined by individual codes.

The facade cladding plans include:

- **Elevation view** in scale 1 : 50 Showing the arrangement of cladding elements with visible fixings. Represent the hidden structures (fixing system, thermal insulation) on the same drawing with division or on a separate drawing according to consultant. Please show arrangement of elements, fixing points, line of dilatations etc. Dimensions, labels, descriptions must be provided.
- **Fastening system view** in scale 1 : 50 It can be a separate drawing or merged to elevation view according to consultant.
- **Sections** in scale 1 : 50. 2 horizontal sections of the layout part selected by consultant and at least 2 vertical sections must be prepared. They must be indicated on the 1:200 scale architectural plans from 1.b semester project. Dimensions, labels, descriptions must be provided. Sections must be taken through doors and windows, showing both types (lightweight and heavyweight) of facade claddings. If it's not possible on one segment of the facade, two parts of the layout must be selected and worked-out. All used order of layers must be given on the sections.
- **At least 5 details** (without door and window) in scale 1 : 5 or 1 : 2,5 of facade cladding for example: joining of different cladding systems, footing detail, adjoining roof detail, corner details. General vertical and horizontal must be shown on the details but they are not individual details. Dimensions, labels, descriptions must be provided. Please be consequent with sections and order of layers.

2.b SEMESTER PROJECT: PLAN OF EXTERNAL DOORS AND WINDOWS

Prepare the installation plan of a window or balcony door of several units selected by consultant with shading system, applying the two different facade cladding system.

The external window plans must include:

- **external view** (in scale 1:20 or 1:25): representing visible elements (adjoining facade cladding, window frame and sash, flashings, operation mode symbol), hidden elements (wall structure, shading system, window fixing, facade cladding fixing) with named elements and dimensions.
- **sections**: at least 1 vertical and 1 horizontal section (in scale 1:20 or 1:25) showing adjoining structures (facade cladding system, wall, slab and lintel, shading system etc.); with named elements and dimensions.
- at least three **details** (head, side and threshold in scale 1:1, 1:2, 1:2,5) with named elements and dimensions, order of layers.
- **At least 5 details** (with door and window) with the application of the designed facade cladding system. For example: side detail, top detail with shading system, window sill detail, balcony door threshold detail with joining waterproofing, joint of fix glazing and opening sash, corner detail. Dimensions, labels, descriptions must be provided.

The semester project cannot be completed with CAD.

If the project is completed on tracing paper, sketches must be submitted in as well.

Deadline of 2nd semester project: 14. 05. 2021.
Late submission of 2nd semester project: 21. 05. 2021.

FORMAT REQUIREMENTS

Semester projects must be prepared according to the rules of the technical representation, with appropriate graphic representation and level of detailing (highlighting the section character, line thicknesses, material representation, dimensions, labels, descriptions etc.) adequate with the purpose of the given part of the plan. There must be an intention for a well-usable, uniform and aesthetic way of representation, a readable technical writing. For existing layouts of former semesters, additional drawings or corrections are recommended with color.

Plans can be prepared on tracing paper, sketching paper or paper either with pencil or ink, but everything must be handed-in digitally. Please prefer paper maximum size A3.

Semester project with not differentiated line thickness, without material indication (dashing), inconsistent dimensioning, incomplete labels or descriptions, too faint or difficult to read will not be accepted by the Department. Also, the Department does not accept the copied plans of the previous semesters or the details contained in the workshop exercises.

During this semester, computer-drawn work is only allowed for the door and window specification, in which case the continuous consultation is required.

SUBMISSION OF SEMESTER PROJECT

In order to successfully elaborate of the semester project there's a need of significant individual collection of knowledge and material research. In addition to the scheduled group consultations, extra consultation occasion is only possible in justified cases, to a limited extent, at dates agreed in advance with the instructor.

Deadline of semester project submissions and late-submissions are indicated in the schedule. All submissions are expected strictly via MICROSOFT TEAMS ASSIGNMENT.

Late submission of project assessments failed to be handed in by the deadline is possible at the time determined in the faculty's schedule, by payment of a fee for special procedure. Project assignments submitted by the deadline for late submission will be taken into consideration with a score reduced by 10% when determining the final mark.

Incomplete semester projects with less than 90% readiness or not submitted by the deadline will not be accepted by the Department. A project assignment already submitted (closed partial performance assessment) cannot be revised or retaken.

Hand-over of semester projects and results are also indicated via Teams Assignment. In all occurring questions the requirements detailed on the Subject Data Sheet is normative.

Lajos Gábor, TAKÁCS PhD Keve Kund, BÁNDI Katalin, TOLDI Botond, KOVACS