



Budapest University of Technology and Economics
Faculty of Architecture

Dean's Circular / 2024-04-24

On the topic announcement, draft, end-of-semester, and defence submission requirements for the Diploma Design based on specialization curriculum units

In force as from: 1 September 2024

Related organizational implements:

Regulation on the procedure and requirements for the Diploma Design preparation, and diploma defence based on the specialization curriculum units introduced in the 2022/23 academic year in the Integrated MSc Program in Architectural Engineering and in the 2023/24 academic year in the Master of Science Program in Architecture from September 2024 (24.04.2024)

and the Resolution of the Faculty Council: Rules on the procedure and requirements for the preparation of the Diploma Design and for the Final Examination and Defence of the Integrated MSc Program in Architectural Engineering and Master of Science Program in Architecture (14 September 2021).

Discussed by: Heads of Departments, Faculty Study Committee, Faculty Education Conference

Responsible: Dr. György Alföldi DLA, dean

Dean's Circular / 2024-04-24 / On the topic description, draft, end-of-semester, and defence submission requirements for the Diploma Design based on specialization curriculum units

Introduction

- (1) Contents of Dean's Circular:
 - a) Content of the topic announcement.
 - b) Mandatory content of sketch design and formal requirements.
 - c) End of semester submission, including content and formal requirements of submitting the diploma defence.
- (2) The content and formal requirements for the preparation of a Diploma Design based on the specialization curriculum units introduced in the Integrated MSc Program in Architectural Engineering of the BME Faculty of Architecture in the 2022/23 academic year and the Master of Science Program in Architecture in the 2023/24 academic year is determined, in connection with the "1/2024 (VI.24) Resolution of the Faculty Council on the procedure and requirements for the Diploma Design preparation, and diploma defence based on the specialization curriculum units introduced in the 2022/23 academic year in the Integrated MSc Program in Architectural Engineering, and in the 2023/24 academic year in the Master of Science Program in Architecture (24.04.2024)" (hereinafter: Regulation), as well as the "Resolution of the Faculty Council: Rules on the procedure and requirements for the preparation of the Diploma Design and for the Final Examination and Defence of the Integrated MSc Program in Architectural Engineering and Master of Science Program in Architecture (14 September 2021)" regulations.
- (3) The Diploma preparation procedure introduced in the faculty's courses and laid down in the regulations referred to in point (2) is directly connected to and builds upon the preceding Diploma Preparatory Specialization Course (DPSC) (BMEEPXXQ901). During the completion of the DPSC, the students research the topic and location of their Diploma Design in more depth. The purpose of this subject, as a preparation for the diploma semester, is to go through the topics defined in the specialization in depth, to carry out related research, and to prepare the architectural program of the diploma. For the acceptance of the subject, the materials compiled in a specified manner according to the specializations contain clear references and/or instructions for the topic announcement of the Diploma Design, both in relation to the specialization and the architectural part of the work.
- (4) The Dean's Circular uses the terms of the regulations referred to in point (2).
- (5) The results of the Diploma Preparatory Specialization Course may have different content according to the specificities of the specializations; therefore, the input data of the Diploma Design may be specified in different depths.
- (6) This circular and the regulations referred to in point (1) do not contain the requirements of the DPSC (BMEEPXXQ901). In this circular, only the elements necessary for managing and understanding the connections and interdependence are mentioned.

1. Content of the topic announcement

- (1) The topic announcement of the Diploma Design starts the Diploma Design subject, connected to, and based on the semester results of the Diploma Preparatory Specialization Course.
Contains:
 - a) specialization work content of the Diploma Design,

- b) Architectural program.
- (2) The content requirements of the Specialization work part of the Diploma Design are included in the individual descriptions of the Departments in charge of the Specialization:

a) *Architectural Heritage Specialization*

In the design process, in every design phase, from concept creation to detailing – in addition to the usual boundary conditions of architectural design, the student incorporates the results of the DPSC subject 1-3 into their plan in accordance with the well-known methodology of monument preservational design. In addition to the intellectual values of the heritage (*genius loci*), the physical reality of the structures is decisive in the plan.

b) *Architectural Specialization*

- The defining part of the Diploma Design prepared in the Architectural Specialization is the architectural plan developed with outstanding depth and architectural sophistication, taking a comprehensive position in relation to the place and the problem (program), focusing on presenting architecture as an indivisible whole in the diploma plan. The specialization part of the work complements the architectural plan created with this approach and continues with the development of the interior space.
- The specialization work part is the design expressing the atmosphere of the typical spaces of the designed building (e.g. at least two independent or interconnected spaces). The aim of the task is to examine and define the elements that determine the atmosphere of the architectural space. The work content must present the light conditions of the space, the use of materials, the character and colours of its interior design, tools, and equipment (built-in furniture, coverings, and furniture), etc.
- When developing the building, it is necessary to strive for uniform, coordinated development of the exterior and interior spaces of the building. The interior spaces should provide a well-thought-out background to the chosen function, paying attention to the proportions, spatial design, spatial connections, lighting, and furniture. On the plans showing the entire building, the interior relationships, spatial proportions, spatial forms, mobile and built-in furniture of the building should be clearly indicated.
- Additional content of the specialization work part:
 - A two-dimensional drawing, collage, painting, etc. showing the atmosphere of the chosen space. The rendered visual plan alone should be avoided, can serve as a basis for collages and montages.
 - Three-dimensional model. A larger scale in which illumination experiments can be carried out is recommended. The model can be expressive in its material, but it can be neutral, can be photographed, which can later be provided with additional content in two-dimensional presentation.
 - 2 or 3 photographs of the model should be provided.
 - Detailed development of an interior space.
 - Mood board of the building and its interior materials.

c) *Form and Structure Specialization*

The diploma plan must include a specialization work section, which can be the following depending on the graduation department and the choice of topic: visual processing of a part of the building with digital or physical tools, building information model, parametric model, finite element model, structural design details.

d) *Real Estate Development Specialization*

Detailed content of the specialization work part:

- Executive summary: a short summary of the project, including the most important data.
- Market analysis: Based on an investigation of the real estate market, prepared by involving different sources and comparing similar projects. Updating and refining the task part developed during the Real Estate Research (BMEEPEKQ901) subject in accordance with the changes that occurred during the planning.
- Product definition: The basis for defining the real estate market product is the examination of the market. The detailed description must include the real estate market characteristics: areas, pricing, tenants, user groups, operating costs, other relevant variables. The proposed marketing tools must be presented. Updating and refining the task part developed during the Real Estate Development Research (BMEEPEKQ901) subject in accordance with the changes that occurred during the planning.
- Feasibility study: Calculating the total cost of the project, preparing the project schedule. Preparation of the project's cash flow. SWOT and risk analysis. Presentation of real estate economics calculations: NPV, IRR, DPB, compared with real estate market data.

e) *Environmentally Conscious and Innovative Building Construction Design Specialization*

The specialization work part of the Diploma consists of:

- In addition to the updating of the parts developed within the framework of the DPSC subject, the structural subsystem or architectural part that best suits the architectural and functional characteristics and agreed with the specialization supervisor must be developed (these are usually the structures that basically determine the external appearance of the building: the facade with doors and windows, external wall, and the roof). The specialization work section that best suits the characteristics of the planned building must be developed:
 - energy certification or any building-related simulation (e.g. Energyplus)
 - some detailed calculation and its careful presentation (rating system, ecological footprint, etc.)
 - in justified cases, building acoustics or fire prevention work to verify the suitability of the planned building,
 - an in-depth study of the topic of building construction related to the building: (a) a real-scale 1:1-1:2 built junction of simple industrial structures (e.g. waterproofing, wooden structure, etc.); (b) designing more complex industrial structures at the product level, coordinating with manufacturers, or even looking for innovative solutions; (c) 3D nodes, building information model construction of nodes, BIM data extraction,
 - any other interesting development agreed with the specialization supervisor.
- The elaboration shall consist of detailed 1:50 scale cross-section and 1:20 scale partial section, respectively, in addition to the 1:20 facade detail with the same cut-out, 12 detailed drawings of the affected construction on a scale of 1:5 or smaller (possibly three-dimensional or exploded view).
- In addition, a detailed technical description of the affected building construction must be prepared, with performance characteristics and calculations proving the fulfilment of the requirements determined according to the nature of the building and the technical tasks to be solved related to the architectural concept.

- Part of the Diploma work is also a specialized summative work (display panel) that illustrates the preparation of engineering decisions regarding building structural solutions and the justification of the decision, highlighting the wide-spectrum, multidisciplinary, holistic thinking that distinguishes the architect from both the engineer and the artist.
- Formal requirements: The study and its appendices are bound together in A4 format, by folding the appendices larger than A4 to A4 size and attaching them in a fold-out manner. Nodes, detailed drawings, or other structural drawings that aid understanding can be made in the same format as the diploma plans.

f) *Urban Design Specialization*

During the preparation of the specialization work part of the Diploma, we place emphasis on the presentation of the existing and planned urban-architectural environment (social-economic, built, and natural), the mandatory and recommended content requirements of which are as follows:

- Presentation of the design site in written and visual form: detailed photographic documentation of the design site; presentation of the legal environment of planning: presentation of the regulations for urban development, planning and other environmental design tools, analysis as necessary.
- Site plans (and aerial photos), indicating the planned environmental (built, natural) intervention - existing and planned condition as necessary - indicating elements relevant to the plan: large-scale urban, landscape context – 1:5000, 1:4000 or 1: 2000 (possibly 1:10000); presentation of the environment of the intervention – 1:1000 or 1:500; presentation of the immediate environment of the architectural intervention (by presenting neighbouring lots, neighbouring buildings and adjoining public areas); recommended scale: 1:250/200.
- Street view or environment (existing and planned state as necessary), represented as necessary for the task (neighbouring buildings, immediate landscape environment); recommended scale: 1:500 or 1:200.
- Concept plan for the development of public areas or open spaces around the building, on a scale determined with the consultant (typically 1:500 or 1:200).
- The concept of amending the settlement plans in case of deviations from the existing settlement plans.
- The specialization work parts must be presented primarily in drawing and plan form on at least one independent panel at the diploma defence, while the model listed among the architectural work parts of the diploma plan must necessarily be a model depicting the context and installation. The internal ratio of the elements of the work can be modified in consultation with the consultant or the head of the department.

g) *Sustainable Architecture Specialization*

The content of the specialization diploma design is a presentation of the designer's decision-making process, which considers sustainability aspects for the entire life cycle of the proposed building, in relation to programming, functional design, environmental fit, mass formation, space creation, material selection, structure selection, design of building service engineering systems, construction organization. A building life cycle assessment must be prepared.

(8) The content requirement of the Architectural work part of the Diploma Plan

- Site plan, with adequate detailed content, preferably provide sufficient data for building planning without additional measurements,

- Summary of the architectural program and input data of the design:
 - the proposed purpose of the building
 - capacity of the proposed building
 - important information about the proposed building's location
 - the characteristics that are necessary for technical design, with appropriate detail,
 - information about the tasks to be processed.

2. Mandatory content requirements and formal requirements of the Sketch Design Documentation

- (1) Section 12 of the Regulations. According to the Sketch Design Documentation, it must be a complex design documentation describing the architectural concept, consisting of illustrations and written explanations.
- (2) Architectural work part requirements
 - Presentation of site plan (immediate and wider environment) photographs, drawings, aerial photographs, etc., the scale of which is adjusted to suit the size of the plan
 - 1:200 floor plan(s) necessary for understanding, with elaboration appropriate to the scale
 - 1:200 cross section(s) necessary for understanding, with elaboration appropriate to the scale
 - 1:200 elevation(s) necessary for understanding, with elaboration appropriate to the scale
 - the written part must describe the architectural concept in text and contain the final design program.
- (3) Content requirements for sub-consultancy disciplines
 - Loadbearing structure work part: presentation of the building's loadbearing structure system on sketches, which describe the structural systems in a way that can be interpreted in space (1 piece of A4 sheet);
 - construction technology work part: examination of the environmental effects (hydrology, orientation, noise conditions), as well as the requirements and their feasibility in the light of the architectural concept;
 - construction technology and construction management work part: outline development of the construction investment project (description and "stakeholder-map");
 - building energetics and building service engineering work part: definition of needs (comfort requirements, operation of the building) and analysis of the planning site (inspection of sunlight, shading possibilities, utility networks, examination of renewable energy sources).

3. Content and formal requirements of the Semester Plan Documentation

- (1) The Semester Plan Documentation according to Section 13 of the Regulations must be submitted in accordance with the approved performance evaluation schedule, the mandatory architectural work parts with full technical content, without final graphic development, and the mandatory sub-consultancy discipline work parts with full development, with the following content.

(2) Architectural content

- The architectural study serving as the theoretical foundation of the Diploma Design presents the "development history" of the Diploma Design from the first sketches to the final design. Based on independent ideas, the study describes the conceptual elements of the plan, as well as their relationship with the topic, the location, the professional history, and possible research results, by presenting the studied literature.
- Part of the Diploma Design is the documentation of the site and the program (functional analysis and/or room list), which includes their analysis and evaluation, as well as the presentation of the architectural concept based on their defining characteristics, primarily with the help of drawings and photos and a short supporting, explanatory and explanatory text.
- Location plan
 - 1:1000 or M=1:500 scale site plan, depending on the size of the planning area. The parameters of the planned development must be presented on the location plan.
- Architectural plan
 - A detailed site plan on a scale of M=1:500 or M=1:200, depicting the roof top view and the design of the immediate environment (lot) (roads, parking lots, landscaping, main gardening solutions, environmental compatibility, public space connections, etc.). If the program or plan also affects a public space, its design must also be addressed.
 - 1:100 scale floor plans, from all different levels, with technical and graphic elaboration corresponding to the scale.
 - Sections to a scale of M=1:100, as required for a complete presentation of the spatial arrangement of the building, with technical and graphic elaboration corresponding to the scale.
 - 1:100 scale elevations, from all views, with technical and graphic elaboration corresponding to the scale.
 - 1:50 scale section (1 piece), with detailed, technical, and graphic elaboration at the level of a construction plan.
 - 1:20 scale partial section (external wall section) taken on the most typical facade part of the building, and the facade detail with the same cut-out and scale, with technical and graphic elaboration at the level of a construction plan.
 - 1 physical model, mock-up for visual presentation of the spatial design of building masses, made of any material and technique, in the scale required for illustration of the design purpose.
 - Minimum 1-1 visual illustrations, showing the exterior and interior of the building, using any technique.
- Construction technology and construction management work part
 - description of the circumstances of the investment (need for construction, project participants, expected execution of the construction process, financing and legal background)
 - presentation of the construction process, description of the construction technologies used
 - determination of the financial need for the planned project implementation
 - preparation of spatial organization (1 organizational phase plan) 1-1 visuals showing the external appearance and interior spaces of the building, using any technique

- Building energetics and building service engineering work part
 - definition of needs, comfort requirements, operation of the building; analysis of the planning site: study of sunlight, shading possibilities, utility networks, study of renewable energy sources
 - building physics and building energetics calculations: thermal and vapor technical examination of boundary structures, examination of aggregated energetics characteristics
 - conceptual draft of the building's energy supply and building service engineering
- Building constructions work part
 - examination of environmental effects: hydrology, orientation, acoustic conditions
 - examination of the requirements and their feasibility in the light of the architectural concept
 - determination of performance characteristics
 - examination of composite structures, layers
 - presentation of the node solutions that are decisive for the architectural concept (6 pieces)
 - conceptual draft of the building's energy supply and building service engineering.
- Loadbearing structures work part
 - description of the building's loadbearing structures, from the load transfer to the ground to the enclosing structures, description of the materials used and load bearing systems.
 - presentation of the building's loadbearing structure system on schematic drawings, which describe the structural systems in a way that can be interpreted in space.
 - structural calculations for a selected loadbearing structural element, which describes the loads, the structural model, and the verification of the loadbearing structural requirements.

4. Content and formal requirements of Diploma Design Documentation

- (1) All submitted documents form part of the final Diploma Design Documentation according to Section 15 of the Regulations, the final Diploma Design Documentation must be submitted by the submission deadline specified in the Faculty Work Order as follows.
- (2) In accordance with Section 15 (2) (3) (4) of the Regulations, the following must be submitted:
 - a) previously completed materials of the DPSC subject;
 - b) the Architectural work part – completed with visual plans, a physical model (as required by each specialization) and supplemented with 4 professional disciplinary parts prepared for the Semester Plan Documentation;
 - c) the Diploma Design Specialization work part with the content according to point 1. (2) of this Dean's Circular.

Budapest, 24 April 2024.

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