

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

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Methodical recommendations
for practical classes and organizing independent work
on an academic discipline

**“ARCHITECTURAL DESIGN OF BUILDINGS AND STRUCTURES:
CULTURAL AND ENTERTAINMENT BUILDING
WITH AUDIENCE HALL FOR 300 SEATS”**

*(for third-year full-time
foreigner students first (bachelor’s) level of higher education
specialty 191 – Architecture and town planning)*

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INTRODUCTION

In the current conditions of fast pace of life, constant movement of the population of different countries from one part of the world to another, the problem of cultural and national development is acute. This situation determines the formation of cultural development institutions. The potential for using such facilities is extremely high. Such institutions meet both the local needs of the population and their social and cultural needs. Currently, there is an active integration of cultural objects into the world cultural space. Therefore, the full and comprehensive identification and study of cultural heritage aims at the balanced use and comprehensive preservation of this cultural heritage. This is a strategic, humanistic and scientific-practical task. Protection of national cultural and spiritual heritage is recognized as one of the priorities of the Development Strategy of Ukraine. One of the leading roles in the comprehensive development of people belongs to cultural education. Thus, national cultural centres play an important role in this process. There are objects all over the world that reflect the cultural traditions of a nation not only functionally but also architecturally.

The architectural image of cultural and entertainment buildings must be modern, this image should reflect the development and latest advances in science, technical innovation and design. Therefore, it is timely to study the world experience of designing cultural and entertainment buildings, determine the peculiarities of the formation and development of scientifically sound recommendations for this process. This study will allow professionals to address the issue of effective creation of the architectural environment of cultural and entertainment buildings.

Cultural and entertainment buildings are multifunctional complexes designed for cultural development and recreation of all social groups. Such complexes are a meeting place for people with art. This place covers more than one part and more than one area of culture. The design of cultural and entertainment centres, if we look at them from the standpoint of their architectural features, is quite relevant. First, such buildings are architectural dominants in the urban structure. Secondly, at the present stage, these buildings reflect public life. Such buildings are one of the most

important objects of the city's cultural space. The practice of creating centres, clubs and folk houses came to us from Western Europe. Throughout the twentieth century, houses of culture existed and developed in Spain (Casa de la Cultura), Belgium, Finland (Kulttuuritalo), France (Maison de la Culture), Canada (Maison des jeunes), in Latin America. Club institutions of the same type were created in socialist countries. The modern period of formation of leisure complexes is characterized by the rejection of the terms “house of culture”, “palace of culture”. These facilities have been renamed the so-called “cultural centres”, “concert halls”, “cultural and leisure centres”, etc. Requirements for their design are determined in accordance with the State Building Standards of Ukraine “DBN B.2.2-16-200. Cultural and entertainment and leisure facilities”.

In the process of creative search for architectural forms of modern cultural and entertainment centres, the leading architects were given certain tasks:

- the building should be intended for both mass and individual communication;
- the building should be located on the city square or placed so that the central facade was facing a city highway;
- the appearance of the building should convey its functional purpose.

In the current cultural situation there is a new task. The essence of this task is to rethink the approaches to the organization of cultural and entertainment facilities, taking into account their activities. Employees of cultural institutions need to create innovative forms of cultural activity. These are forms of leisure, spectacular innovations. These forms of activity must be commensurate with the existing needs of the population.

These guidelines provide the material needed to perform practical classes, develop a course project and organize independent work of students. These activities are provided in the process of studying the discipline “Architectural design of buildings and structures: cultural and entertainment building with audience hall for 300 seats”.

1 THE PURPOSE AND OBJECTIVES OF THE COURSE PROJECT

The main goal of the project is for students to master the basics of methodology and skills of creating relevant individual design solutions for cultural and entertainment facilities. These structures must have pronounced characteristics (figurative, functional, structural characteristics, etc.) for integration into the existing architectural environment. The following tasks must be solved during the development of the project of a cultural and entertainment facility:

- maximum consideration of urban characteristics of the territory as an important factor for creating the best conditions for the population and providing the object of design of individual qualities;
- rational functional zoning of the territory and object;
- clear architectural and planning organization of the territory and object of design. Students must take into account the rational system of service and recreation of the population; engineering, sanitary, environmental and economic requirements must also be taken into account;
- clear organization of the system of transport and pedestrian paths;
- creation of an expressive architectural and artistic image of the object and its separate functional zones.

2 THE COMPOSITION OF THE PROJECT

The course project involves the development of a project of cultural and entertainment facilities on a real basis with the architectural solution of the surrounding area.

The scope of the project is 3–4 A1 formats.

Contents of the course project:

1. Situational plan (Appendix A).
2. Schemes:
 - scheme of landscape-urban analysis of the territory, Scale 1 : 2000;
 - scheme of functional zoning of the territory, Scale 1 : 2000;
 - scheme of transport and pedestrian paths, Scale 1 : 2000.

3. Master plan of the cultural and entertainment centre (Scale 1 : 500), wind rose and explication to the master plan. The master plan depicts: the building of the cultural and entertainment centre, parking lots for visitors and staff, utility sites, landscape and recreational area with leisure zones. It is also necessary to depict the streets adjacent to the land plot and to offer an architectural solution for pedestrian entrances and car entrances to the territory.

4. Floor plans (Scale 1 : 200) with the image of sanitary equipment (toilets). Coordinating axes and dimensions of the main structural elements are plotted on the image of plans in accordance with current state standards for the design of drawings. The plans should indicate the area of all premises (the mark should be placed in the lower right corner of the room and underlined with the main solid line; measurement accuracy – up to hundredths of a square meter). The names of the premises are given in the explication.

5. Facades (Scale 1 : 200) with indication of extreme coordination axes and height marks of main structural elements.

6. Section on the stairs without a detailed image of structural components (Scale 1 : 200). Coordination axes and dimensions of the main structural elements are applied to the image in accordance with current state standards for the design of drawings. The section shows the height marks of all structural elements and the dimensions between the axes of the load-bearing structures.

7. Perspective images of cultural and entertainment facilities (visualizations). These images should show the environment (staffage), made by the appropriate graphics.

8. Technical and economic indicators.

9. Interior plan of a public space (Scale 1 : 100) and its visualization.

10. Brief explanatory note to the project.

3 FEATURES AND SEQUENCE OF THE PROJECT

The course project is performed on the basis of the task issued by the project manager. The task is performed on the basis of the initial topographic situation (topographic base) issued by the teacher.

First of all, it is necessary to determine the location of the cultural and entertainment facility and its connections with other components of the city master plan (city highways, centres, residential areas).

The next step is to implement a scheme of comprehensive assessment of the development area in relation to planning constraints and visual perception of the environment, highlighting the unique properties of the situation. When developing a project of a cultural and entertainment facility, it is necessary to solve a set of tasks. These tasks are: development of the conceptual solution of the building in accordance with the modern approach to the design of the object; organization of rational functional zoning (with the possibility of further transformation), which meets the diverse needs of the city population in recreation; the choice of methods of forming the surrounding landscape; organization of traffic and pedestrians, solving parking spaces; creating a distinct architectural and artistic image of the environment. It is important to analyse the current state and current trends in the design of cultural and entertainment facilities; it is also important to take into account the impact of urban, social, technical, economic and natural factors.

Project implementation sequence:

1. Acquaintance with the text part of the task, the topography of the area, the study of guidelines and literature on this issue.
2. Execution of an abstract on the topic of the project.
3. Execution of pre-project landscape-urban analysis of the territory (Scale 1 : 2 000).
4. Development of a scheme of functional zoning of the territory of the cultural and entertainment facility (Scale 1 : 2 000).
5. Development of the scheme of transport and pedestrian paths (Scale 1 : 2 000).
6. Development of a sketch of the master plan of the cultural and entertainment facility (Scale 1 : 500). Sketch approval.
7. Execution of drawings according to the approved sketch of the master plan

of the cultural and entertainment facility on a clean copy using certain computer programs.

8. Development of plans, facades, section of the building of the cultural and entertainment facility (Scale 1 : 200).

9. Execution of the image of the perspective from a bird's eye view and execution of sketches of perspectives.

10. Design of the project exposition and a brief explanatory note. If desired, the student can make a video presentation of his project.

11. Project defence.

3.1 The content of the abstract and methods of its implementation

The main purpose of writing an abstract – to acquaint students with literary sources and regulations on the design of cultural and entertainment facilities.

The abstract is performed according to the following plan:

1. Introduction (general information about the types of cultural and entertainment institutions, features of the cultural and entertainment centre).

2. Section 1. History of the development of cultural and entertainment leisure centre (a brief overview of planning, compositional and design features of the formation of cultural facilities in different periods in different countries and regions: the emergence and development of cultural and entertainment centres).

3. Section 2. Architectural-planning and compositional organization of cultural and entertainment centres (types of compositional and planning solutions for multifunctional centres; passage, atrium, enfilade, hall or mixed structure, entrance area – organization of main and auxiliary entrances: grouping of premises by functional purpose; nomenclature of trade group premises, service premises – requirements to the areas and placement of cash registers, wardrobes and toilets).

4. Section 3. Volumetric and spatial organization of the cultural and entertainment centre (number of storeys and organization of human flows, vertical communications – stairs, elevators, escalators, ramps; blocking of the main volumes; the use of tent structures, cable-stayed structures and other spatial structures and their

influence on the spatial structure of the building).

5. Section 4. Constructive solutions of cultural and entertainment centres (solutions for the main structural elements of foundations; load-bearing frame: columns, walls; facade systems; overlap: types, monolith; coverage: types of spatial structures; windows, doors, shop windows; stairs).

6. Appendices (examples, analogues).

7. References.

Each section of the abstract should have illustrations.

3.2 Scheme of landscape and urban analysis of the territory

Getting started, it is necessary to conduct a landscape and urban analysis of the selected area (Appendices B, C, D). The further overall design solution of the new facility should be based on the results of this analysis. The scheme should indicate information about the existing development of the selected area: it is necessary to determine whether there are architectural monuments, historical monuments and their protected areas, it is necessary to determine the number of storeys of the building on the territory itself and the number of storeys of the immediate environment along the perimeter of the territory, it is necessary to indicate the physical condition of buildings and the general nature of the terrain, it is necessary to identify individual features of the territory. It is necessary to determine the urban planning specifics of the site, students must graphically show the existing architectural dominants and nodes of urban composition, nodal points of architectural ensembles and complexes, unique spatial and landscape combinations. Students must also determine the spatial scale of the building on the diagram: it is necessary to determine the ratio of heights of buildings, built-up and unbuilt-up spaces, students must also analyse the degree of landscaping.

3.3 Scheme of functional zoning of the territory

The scheme of functional zoning of the territory must be performed on a topographic survey at a scale of 1 : 2 000. This scheme provides information on the functional organization of the area selected for the design of the object. The diagram

should indicate the volume and relative position of all existing functional areas. Existing buildings are distinguished by different colours, according to their functional affiliation, the area around the buildings according to their function must also be highlighted in colour (the area should be highlighted in the same colour as the building, but lighter in tone) (Appendices B, C).

3.4 Scheme of transport and pedestrian paths

The scheme of transport and pedestrian routes provides information on the organization of road and pedestrian traffic existing on the territory. This scheme is performed on a topographic survey at a scale of 1 : 2 000 (Appendices B, C).

Students must analyse traffic and mark the following elements on the scheme:

- streets with a high level of traffic;
- streets with low traffic;
- one-way traffic (the scheme should show the direction of traffic);
- two-way traffic;
- intra-quarter entrances;
- courtyard driveways.

The scheme should highlight public transport stops, if these stops are in the neighbourhood or on the other side of the street. Students must indicate on the scheme the type of transport, mark transport parking lots.

It is necessary to analyse the paths of pedestrian traffic and mark the following elements on the diagram:

- transit pedestrian traffic;
- targeted pedestrian traffic;
- entrances to the building.

3.5 Development of a sketch of the master plan

The sketch of the master plan is performed in Scale 1 : 500 (Appendix H).

The main tasks of this stage:

1. Adoption and refinement of the planning and spatial structure of the cultural

and entertainment facility.

2. Creating a distinct architectural and artistic image of the cultural and entertainment facility and the surrounding area.

Location of cultural and entertainment facilities in the city and the choice of land are determined by the planning and transport structure of the city, the nature of the surrounding buildings, the presence of greenery, the number of similar buildings around, their composition, structure of the city centre and more. The choice of a land plot for design must be made on the basis of a pre-project study. When choosing a site for design, you need to take into account its area, shape, nature of the terrain, features of the location relative to the highways (it is necessary to take into account the presence of stops of different modes of transport, the possibility of car and pedestrian access), points of view opening from the side of the design area and viewpoints to the territory.

The nature of the relief and viewpoints from which the view of the land plot is revealed determine the placement of the compositional accent of the cultural and entertainment object. It is necessary to take into account the height and configuration of the building when we place the building of the cultural and entertainment centre on the design site: the new building should not overlap with existing architectural monuments.

It is worth noting the following options for the location of cultural and entertainment buildings: entertainment facilities in the city centre; buildings of district significance; buildings located on the outskirts of the city, and entertainment buildings located outside the city. Cultural and entertainment facilities are usually located in the central city squares, where they are of organizational importance in the construction of squares. The volume of the building, open to visual perception from all sides and from great distances, must be developed on a large scale. Here we should highlight the following methods of placement of cultural and entertainment centres in the territory: linear, free, centric and mixed placement, which by spatial solution may look like a separate building or complex.

The design area is divided into zones according to the functional purpose and nature of use. The presence of mass action sites at the main entrance and other entrances should be provided on the territory. Also in this area there are exhibition grounds, pavilions, galleries or passages, dance floor (with stage), pavilions for board games, sports entertainment, playgrounds, attractions, etc. Therefore, the following zones should be distinguished on the territory of the cultural and entertainment centre: landscape and recreational area (with the organization of recreation areas and the use of landscape design; this area can be used for recreation, distribution of human flows), parking for visitors (parking can be designed one or more depending on the number and location of entrances to the centre, also the place and number of parking areas can depend on duration of use of parking – short-term or long), staff parking, utility yard.

Areas in front of entrances and exits should be designed on the land plot near the cultural and entertainment building, these sites near the building of the cultural centre are designed for one seat in the auditorium of the centre of at least 0,3 m²; internal driveways and footpaths also need to be designed.

Car entry into the territory should be organized from streets with less heavy traffic. At the same time, it is desirable to separate the entrances for visitors' cars and service vehicles. Around the building should be provided access for fire trucks. Pedestrian approaches to the building are designed either from the parking lot or from the nearest transport stops.

The main facade of the cultural and entertainment building, from which the main entrances for spectators are arranged, should be located at a distance of at least 30 m from the red line of the building. This arrangement allows you to create a buffer zone in front of the entrances to the building. This area serves to disperse spectators during the evacuation. Also, this area is a place to meet and wait for each other before the show. Landscaping of this area may include the organization of a green parterre, a decorative pool with a fountain, a sculptural composition. A separate entrance must be arranged for staff. There should also be an entrance for transporting products to the kitchen, as well as transportation of decorations and equipment to all workshops

and warehouses. The location of the utility yard on the land plot depends on the location of production facilities and warehouses and requires an isolated area of at least 400 m². Entrances to the utility yard are recommended to be made at least 4 m wide. If there is one entrance to the territory of the utility yard, a circle with a diameter of at least 20 m must fit into its dimensions for turning vehicles around.

Parking for individual cars of spectators and employees of the cultural and entertainment building must be arranged at the rate of one place for three people. When organizing underground parking, it is desirable to organize exits directly to the lobby of the building. Open parking lots should be located no further than 100 m from the entrances to the building.

3.6 Architectural and planning solution of a cultural and entertainment building

The spatial planning, functional and constructive solution of a cultural and entertainment facility must be technically, economically, functionally rational and compositionally expressive. This is achieved through a systematic approach to the formation of an architectural object. At the same time, in this process, students must solve socio-technical, architectural and construction, engineering and technical, sanitary and hygienic, economic problems to create a clear figurative composition of the spatial planning solution of the building.

Cultural and entertainment buildings and complexes are complex multilevel functional and planning structures. According to the area of the site and physical size, such buildings are differentiated into:

- small buildings (compact shape and small building area);
- medium-sized buildings (the presence of blocked buildings, the average building area);
- large buildings (complexes that may consist of one large or several blocks);
- very large buildings (complexes that may consist of one or more large blocks and occupy a large building area).

Regarding the number of storeys of cultural and entertainment centres, they

should be divided into the following types:

- one-storey centres (1st floor);
- low-rise centres (2–3 floors);
- medium-rise centres (from 3–5 floors);
- multi-storey centres (more than 6 floors).

The architectural and planning solution of cultural and entertainment centres of each type should provide a clear division of the main groups of premises and comfortable movement and use of different functional areas. Functional areas of the building must be located in separate blocks. Short and convenient connections need to be established between these function blocks. It is also necessary to organize a rational combination of premises with areas of the open area around the building.

The main feature of cultural and entertainment centres is the combination of several functions in the structure of interior spaces. One of these functions is the leading one, and the other functions are subordinate. Accordingly, a system of functional blocks is formed. Within these functional blocks it is necessary to carry out autonomous zoning of premises (Appendices E, G, I). Cultural and entertainment buildings combine in their structure the functions of cultural education and development. These functions are formed on the basis of the use of functional and planning solutions of such objects as: club buildings, palaces of culture, religious buildings, museums, libraries, theatres, sports and educational facilities. Thus, according to the predominant activity, it is advisable to classify cultural centres as follows: entertainment centres; creative centres; information and business centres; cultural and leisure centres; cultural and sports centres; cultural and religious centres, etc.

Spatial solutions of cultural and entertainment centres can be classified according to the following characteristics:

- compositional and planning structure of the building: cell, hall, passage, atrium, enfilade;
- placement on the master plan: centric, linear, block, pavilion;
- plan structure: symmetrical, asymmetrical, picturesque.

The height of the floors must be designed within the following limits:

- auditorium and sports halls: 6–9;
- stage: 9–12 m;
- foyer and lobby: 4,2–5,4 m;
- other premises: 3,3 m.

The height of the passages of the pedestrian zone should be planned not less than 3,3 m, the height of the passages in the transport zone should be planned not less than 4,5 m.

Premises of cultural and entertainment centres are divided into the following groups:

- the premises of the spectator complex;
- premises of the demonstration complex: auditorium, stage, premises for technological support of the stage;
- premises for technological support of film screenings (premises serving the stage): premises for creative and technical staff (warehouses);
- administrative and utility rooms;
- production facilities;
- premises of the club complex: premises for recreation and entertainment, premises for studios and hobby groups.

Group recreation rooms are divided into active and quiet recreation rooms. Recreational facilities include a dance hall, music rooms, and slot machines. Quiet areas include rooms for drawing, design, exhibition halls, etc.

Spectator complex: cash lobby (0,06–0,07 m² / spectator), entrance hall (0,2 m² / spectator), cloakroom, lobby, (0,4–0,45 m² / spectator), buffet (0,2–0,22 m² / spectator), utility rooms of the buffet (not less than 12 m²), exhibition hall (not less than 50 m²), bathrooms (2,0–2,5 m² per device), sanitary facilities are designed based on the ratio of men and women 1 : 2, number of sanitary appliances should be taken: one washbasin for 60 people; in men's bathrooms – one toilet and two urinals per 100 people; in women's bathrooms – one toilet for 30 people.

Auditoriums should be designed with the installation of reclining seats. The width of the seats (between the axes of the armrests) should be at least 0,52 m, the width of chairs and benches should be not less than 0,45 m. The depth of armchairs, chairs and benches must ensure a width of passages between the railings of at least 0,45 m. The distance between the backs of the seats (row depth) should be designed not less than 0,9 m, in cinemas – not less than 1,0–1,1 m. The number of continuously installed seats in a row of seats should be taken: for one-sided exit from a row of seats – no more than 26, for double-sided – no more than 50. The distance between the front edge of the stage and the backs of the seats of the first row of seats for spectators should be at least 1,5 m, and in the halls for spectators with a capacity of up to 300 seats – at least 12 m. The height of the stage tablet above the floor level of the first row of spectator seats should be designed not more than 1 m, and in auditoriums with a capacity of up to 500 seats – no more than 0,8 m (with horizontal floor – no more than 1,1 m). In the auditoriums, the slope of the floor (ramp) is allowed to design no more than 1 : 7. If steps are arranged in the aisles, the height of the steps should be no more than 0,2 m. The complex of sound, light and video projection rooms must be not less than 25 m² (Appendix F).

The premises of the technological support of the film screening include the following: projection room, rewinding room, aggregate room for cooling movie projectors, room for cinema mechanics, radio station, cinema mechanics workshop, and bathroom. In the club part of the building it is possible to place recreational facilities for recreation and entertainment: slot machine room (not less than 30 m²), board games rooms (at least 24 m²), living room (at least 30 m²), winter garden (at least 30 m²), billiard room (at least 30 m²), bowling or bowling alley, dance hall (1,5–2,0 m² / person), pantry of musical instruments and stage equipment (at least 6 m²), musicians' room (not less than 15 m²), administrative premises (not less than 12 m²) and other club premises.

Current trends in the design of cultural and entertainment centres have revealed a trend of multivariate combination of functional areas with different content and, if necessary, with the possibility of their adaptation. Regardless of the chosen project

solution, conditions must be created for free interpersonal communication, for human development. The functional structure of the interior spaces of modern cultural and entertainment centres should include the following areas:

- integrated space zone (recreational zones, winter gardens, exhibition and communication spaces);
- entertainment area (specialized or universal media halls with modern design and technical and automated software to create certain transformations, visual effects, shows);
- exhibition space area (spaces of permanent and temporary expositions);
- information and business zone (spaces with modern technical equipment to ensure information activities, which are combined into an information centre, media library, computerized space);
- interactive creative zone (spaces of technical, musical purpose, zones of artistic creativity);
- modern area of administrative and service facilities;
- entertainment area (this area should have surfaces for broadcasting interactive videos, spaces for creating 3D holograms, space for concerts, dances).

The main rooms should differ not only in size but also in geometric solutions, these rooms should be able to change. Each component of the cultural and entertainment building must have its own spatial and compositional solution depending on the function, and depending on the dominance of this function in the structure of the complex (Appendix J). The entertainment part should play an important role in the composition of the cultural centre. This entertainment part may or may not dominate. Also, the dominant part of the centre may consist of entertainment blocks.

4 STRUCTURAL SYSTEMS OF CULTURAL AND ENTERTAINMENT FACILITIES

The main structures of public buildings include: foundations, frames, walls, ceilings, coverings and vertical communications. For public buildings, socket-type

footing for columns is most often chosen. Also, specialists design pile foundations, as well as monolithic, strip or prefabricated foundations. The optimal structural system of a public building is a frame one. The main elements of the supporting frame are columns, crossbars and beams. External load-bearing walls are used very rarely – only in the case of a complex curvilinear configuration of the building. Such walls are erected from monolithic reinforced concrete. Most often, hinged wall panels or facade systems are used. Internal load-bearing and non-bearing walls are built of reinforced concrete or brick. Floors are made of slab (in buildings with a frame system) or monolithic reinforced concrete. Coverings in public buildings can be of several types: floors of buildings with flat structures (on trusses in frames); spatial cross structures; shells and folded coatings; dome roofs (smooth domes, ribbed domes, ribbed-ring domes, mesh domes, geodesic domes, wavy and folded domes); hanging coverings. The main vertical communications of public buildings include stairs, ramps, elevators and escalators.

Modern cultural and entertainment facilities in their three-dimensional structure and structural system should be an integrated system with quality characteristics of mobility (planning mobility of the object-spatial environment); adaptability (the ability of the system to adapt to the conditions of a particular environment); kinetics (creation of a constructive system of buildings with movement mechanisms). In the projects of cultural centres it is necessary to achieve stylistic unity, integration of automatic “intelligent” elements and systems into the structure of facades in order to improve operating conditions and create a unique artistic image. The formation of innovative cultural and entertainment buildings and complexes has a huge impact on the consciousness and worldview of people. Especially when the projects of these buildings use the techniques of media architecture and design. The latest entertainment facilities also affect people due to the following characteristics: in addition to the physical shell, these buildings are also provided with a virtual shell (expressive and individual architectural and artistic image), also the newest cultural centres have a new function of a source of information (using the surfaces of architectural objects as projection screens).

5 ARCHITECTURAL AND ARTISTIC FEATURES OF CULTURAL AND ENTERTAINMENT FACILITIES

The design solution of the cultural and entertainment complex should have an expressive silhouette and plasticity of the volumes that make it up. In addition, the building should correspond to the image of modern architectural objects for this purpose. This object must also have the features of an architectural ensemble (proportional relations of parts with each other and relations with surrounding objects, uniform scale characteristics, the object must combine stylistic features, material, colour solutions, etc.). It is necessary to use modern media technologies in the volumetric and spatial solution of a cultural and entertainment building. These technologies are related both to the engineering support of the complex (energy-saving innovative technologies, lighting, etc.) and to the shaping of this object (achievements in the field of nonlinear, kinetic, bionic architecture).

The architectural and artistic decision of the cultural and entertainment centre may be determined by the surrounding buildings (the use of stylization in the case of placing the building of the centre next to valuable architectural objects), or an architectural solution can be formed freely, using modern design trends (if the centre building is located in an area with low-value buildings). In both cases, the appearance of the building should reflect its functional purpose.

The combination of different parts of the cultural centre can be done by including in the planning structure of the centre recreational and communication facilities of general use. Such premises should include: recreational halls, atrium spaces, galleries, indoor and partially open courtyards, terraces, green roofs, etc. The unifying function can also be performed by the premises that belong to the function of nutrition (cafes, bars, buffets, etc.). These places can be intermediate blocks of rooms, the entrances to which are organized from different functional zones. The geometry of the planning elements can be designed as a structure formed by plastic or geometric architectural forms. These forms may be similar to each other. The main entertainment, sports and other premises and the premises that serve them can be designed in a similar way, a single modular grid can be used to design these rooms.

Another solution is possible – it can be a planning and three-dimensional structure, where the principle of contrast is applied. This means that the main and service rooms have different geometric shapes (Appendix K).

Thus, the appearance of a cultural and entertainment facility is determined by its spatial planning solution. This architectural solution must clearly reflect the internal content, structure of the building and its urban significance. The variety of schemes for constructing the compositional core of the cultural and entertainment building and the spectator and stage parts of this building creates the preconditions for the diversity of compositional solutions of the external volume and interiors of the building. The core of the building is the hall and the stage. The spectator and stage part of the building are connected with the compositional core of the building. The combination of large halls of the auditorium with other, smaller rooms allows you to build a variety of interiors. These spaces are: lobby, foyer and auditorium. Such interiors will be contrasting in volume, scale, decoration and architectural characteristics.

The main principle of this design approach to the interior is clarity and logical consistency in the interconnection of the premises and in the growth of impressions for the audience from the entrance to the hall.

The creation of a modern cultural and entertainment building is a new approach to the cultural development of the population. This approach allows to ensure, on the one hand, the unity of different structures and institutions of culture, and on the other hand – the integration of all types of leisure management. The main task of modern cultural and entertainment media buildings is to combine the social functions of public buildings and technological functions of multimedia facilities.

In the 21st century, a variety of information technologies are emerging. These technologies have become a means of forming innovative cultural and entertainment buildings. These are buildings that are created using media design tools.

Media design enhances the figurative influence of these buildings. Using the techniques of media architecture and design, innovative cultural and entertainment buildings become compositional accents in the urban environment in the evening.

Such procedures involve the formation of innovative cultural and entertainment buildings. These buildings use dynamic modulation of light colour compositions on the vertical and horizontal surfaces of the building volume. These elements are used in the evening and at night. Such compositions can be used in the structure of interior spaces of buildings.

Currently, the so-called media facades are the most widespread in the architecture of cultural centres (light colour design of the building), touch surfaces (“live” moving facade) and interactive surfaces in the interiors of the building are also common.

In general, media architecture and media design allow you to create a unique artistic image of buildings that can be seen in the evening. Also, these technologies contribute to the diversity of the city through the use of the following techniques:

- design technique of multifunctionality of the building structure includes interchangeability of different functional blocks. This architectural technique forms cultural and entertainment buildings by combining different functional structures using modern technologies and elements-transformers;

- design technique of integration with the environment helps to create media spaces with the best viewpoints; this architectural technique visually expands the interior of the building through atriums and panoramic windows or through interactive features, this architectural technique connects building areas organically with the territory of the building. This design technique is also involved in climate adaptation and figurative transformation of cultural and entertainment buildings;

- design method of using national traditions in the architecture of the building determines the use of local materials and the use of certain regional motifs in the composition of facades and interiors of cultural and entertainment buildings; this design technique is combined with showing and highlighting the decorative properties of the architecture of the building in the evening;

- architectural technique, which is called the “technique of complexity”, provides a comprehensive approach to planning decisions of cultural and entertainment buildings, this technique ensures the versatility and interchangeability of the interior

spaces of buildings, this technique also helps to identify clear functional connections of the building vertically and horizontally with the use of media elements;

– “architectural technique of flexibility and communicativeness of space” involves the use of information on the interior of the building; this architectural technique provides a link between indoor and outdoor advertising and lighting effects; this design technique also introduces a clear communication between the various interactive areas of the object;

– “architectural approach to accessibility and adaptability” gives cultural and entertainment buildings the ability to transform depending on the needs, this technique also allows you to expand the interior space through mobile and interactive elements, these elements are placed in the best viewpoints; this architectural technique ensures the availability of functional areas and provides informative architectural environment through advertising, visual communications;

– “architectural technique of stylistic unity” combines the compositions of the facades of the building with a common stylistic idea, this technique synthesizes the national traditions of stylistics and architectural details into a single artistic system, this technique is characterized by the use of artistic and aesthetic features, also, this technique allows you to develop three-dimensional compositions of various functional blocks of the building; this technique allows the expansion and application of national ornaments and modern technologies of media architecture and design, this technique allows the use of nonlinear, bionic plastic forms in the artistic image of the main volume of the building.

6 GRAPHIC DESIGN OF THE PROJECT

The computer graphic design of the project should help to reveal the three-dimensional solution of the object more clearly. Also, this design should help to reveal the architectural, planning and artistic idea of the organization of cultural and entertainment facilities and the surrounding area. For a better disclosure of the architectural concept, it is necessary to think over the means of graphic presentation of the project so that the finished exposition is executed at a high level.

The master plan should show the wind rose, the contours of the relief, the network of streets and driveways (in red lines). It is also necessary to depict the roadway, the location of the main volume of the cultural and entertainment structure, and utility plots. In addition, the master plan should show parking spaces and recreational areas with greenery and small architectural forms. On the sheet of the master plan you need to place an explication, symbols. Also, on the sheet of the general plan, it is necessary to show the estimated and project balances of the territory and technical and economic indicators according to the general plan. In general, the final design of the project exposition should be done in colour (Appendices L, M).

For the graphic design of the project, it is recommended to use several computer programs with the ability to demonstrate a variety of graphics and prepare a 3D video presentation of the student's project proposal.

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GLOSSARY

Attic floor – floor in the attic space. In classic building, a story built above the wall cornice. The facade of this floor is completely or partially formed by the surface of an inclined or polygonal roof. The area of the horizontal part of the ceiling of the premises must be at least half of the floor area, and the height of the walls to the bottom of the sloping part of the ceiling – not less than 1,6 m.

Atrium – a part of the volume of the house in the form of a multi-light space. This space, as a rule, is developed vertically and has galleries by floors. These galleries have rooms for various purposes. The atrium, developed horizontally in the form of a multi-light way, can be called a *passage*.

Balcony – an open area protruding from the plane of the wall in the form of a console on the facade of the house or in the interior, fenced with railings; a platform that projects from the wall of a building and is surrounded by *a railing, balustrade, or parapet*.

Basement floor – a floor with a mark of the premises below the planning mark of the ground by more than half the height of the room.

Bowling alley (from the English word *to bowl – roll*) – a room for a sports game of balls, which comes from the game of skittles; a facility where the sport of bowling is played.

Buffet – a specially equipped long table or counter for selling snacks and drinks in the lobby, dining rooms, restaurants and more, a counter for refreshments. *Buffet (obsolete meaning)* – a room next to the dining room, where food, dishes were stored, snacks, tea, etc. were prepared.

Cinema is a public institution for public screening of films. The main room of the cinema is an auditorium with a large screen and a sound reproduction system. The sound system consists of several speakers that provide surround sound.

Club (from the English word *Clob or Club*) – a meeting place for people with common interests (business, cognitive, developmental, entertainment, collecting, etc.), often formally united in a society, organization or association.

Couloirs (from the French. *Couloir* – corridor) – utility rooms, corridors and

side halls in buildings of institutions, theatres, concert halls. The couloirs are used for rest of workers and visitors during breaks, intermissions.

Cultural and entertainment building – a building or complex of buildings intended for the demonstration of various exhibitions and for cultural, entertainment and social events.

Estrade (Bandstand) – part of the auditorium, designed for variety and concert performances. The stage (bandstand) can be separated from the auditorium by a portal wall with an open slot; the stage can also be shared with the auditorium.

Evacuation routes – corridors, stairs, stairwells, vestibules, locks and other passages; evacuation routes provide evacuation of people who are in the building.

Finished grade level means the mean elevation of the finished surface or the ground abutting the external wall of the building or structure nearest to a public street, but shall not include any embankment created in lieu of steps.

Foyer, Lobby – a special room or hall designed for spectators. Foyer is a room in a theatre, cinema, circus, designed for the audience to stay in anticipation of a session, performance, as well as for the public to relax during the intermission.

Food court – a dining area in a cultural or shopping centre. The food court can be arranged at the airport or, in some cases, in a separate house. In the food court, visitors are offered the services of several catering establishments that have a common dining room.

Gallery – a communication space in the form of a covered passage, arcade, colonnade, mezzanine or a long balcony. This space connects rooms or parts of the house; the gallery can be blank, glazed and without a fence (except for the railing).

Ground floor – a floor with a floor mark of the premises not lower than the planned ground mark.

Internet cafe – a public institution that provides access to the Internet. Usually in an Internet cafe you can also have a snack, drink coffee (or other beverages), chat. In some establishments the Internet is available free of charge and is included in the entrance fee. Internet cafes are very convenient for those who do not have a personal computer or other device with Internet access at home, or for those who find

themselves in a foreign city and want to write a letter home.

Kegel, Bowling alley (the word comes from the German word *Kegelbahn* – a road with skittles). This game is played by rolling a ball down an alley towards nine pins.

Loggia – a room covered and fenced in plan from three sides. This room is open to the outside or glazed.

Mall – a high-rise building in high-tech style. Also called *shopping mall*, a large retail complex containing a variety of stores and often restaurants and other business establishments housed in a series of connected or adjacent buildings or in a single large building.

Parking – a building for storing cars parked. Parking facilities include indoor and outdoor private property belonging to a house, the side of the road, a parking lot or car park, and indoor and outdoor multi-level structures.

Passageway, passage. A space connecting one area or room of a building with another. An atrium developed horizontally in the form of a multi-light path; covered gallery with a number of shops that have access to parallel streets.

Ramp – (fr. *pente douce* – “gentle slope”) an inclined hollow plane, which is arranged for lifting (for entering) in a building or structure. Ramps are sloped pathways used both inside and outside buildings used to provide access between vertical levels.

Shopping and entertainment complex – a group of commercial enterprises in one building or complex of buildings connected by a covered passage; in this complex, in addition to shops, there may also be cafes, bars, casinos, cinemas. As a rule, the complex is equipped with escalators and provided with parking for personal transport of buyers; such a complex is usually located near public transport stations.

Skating rink – a flat ice surface for skating or sledding. Skating rinks are divided by type of use into mass and sports, by type of ice – into artificial and natural. Skating rinks, in turn, are divided into indoor and outdoor with artificial ice: figure skating and short track skating rinks, hockey rinks and a separate skating rink for skating competitions.

Skylight – a glazed roofing structure for illuminating the premises of a stairwell

or patio.

Socle floor – a floor with a floor mark of the premises, located below the planned land mark at a height of not more than half the height of the premises.

Stage – a specially equipped part of the building, designed to show performances of various genres. Depending on the location of the playing space and equipment, the scenes are divided into the following types: deep grate scene, panoramic scene, scene with three portals, ring scene, central scene, dispersed scene, transformed scene, as well as various combinations of these types of scenes. The traditional deep grate scene includes the following elements: the main playing part of the stage (the stage board), which communicates with the auditorium through a portal opening, advance scene, rear scene (in some cases), side pockets of the stage, these pockets of the stage are connected by slots in the walls with the main playing part of the stage, as well as the hold and the grate and above the grate spaces.

Tambour – a passage space between the doors. The tambour is designed to protect the building from the penetration of cold air, smoke and odours. The tambour is organized at the entrance to the building, as well as at the entrance to the stairwell or other premises.

Technical floor – a floor for accommodation of engineering equipment and laying of communications; the technical floor can be located in the lower part (including the technical underfloor space), in the upper part (including the technical attic) or in the middle part of the building.

Terrace – a fenced outdoor extension in the building in the form of a recreation space. The terrace may have a roof; the terrace is located on the ground or above the lower floor.

Vestibule (Lobby) – a room in front of the entrance to the interior of the building, designed to receive and distribute the flow of visitors. The lobby is used for the reception and short-term accommodation of a significant number of people during the loading and unloading of the building. In winter, you need to more effectively combat the cooling of the lobby. Therefore, between the lobby and the vestibules, a special room is arranged – the *avant-vestibule*.

APPENDIX A

Location of the quarter in the structure of the city and district

Layout of the quarter in the structure of the city



The layout of the quarter in the structure of the district

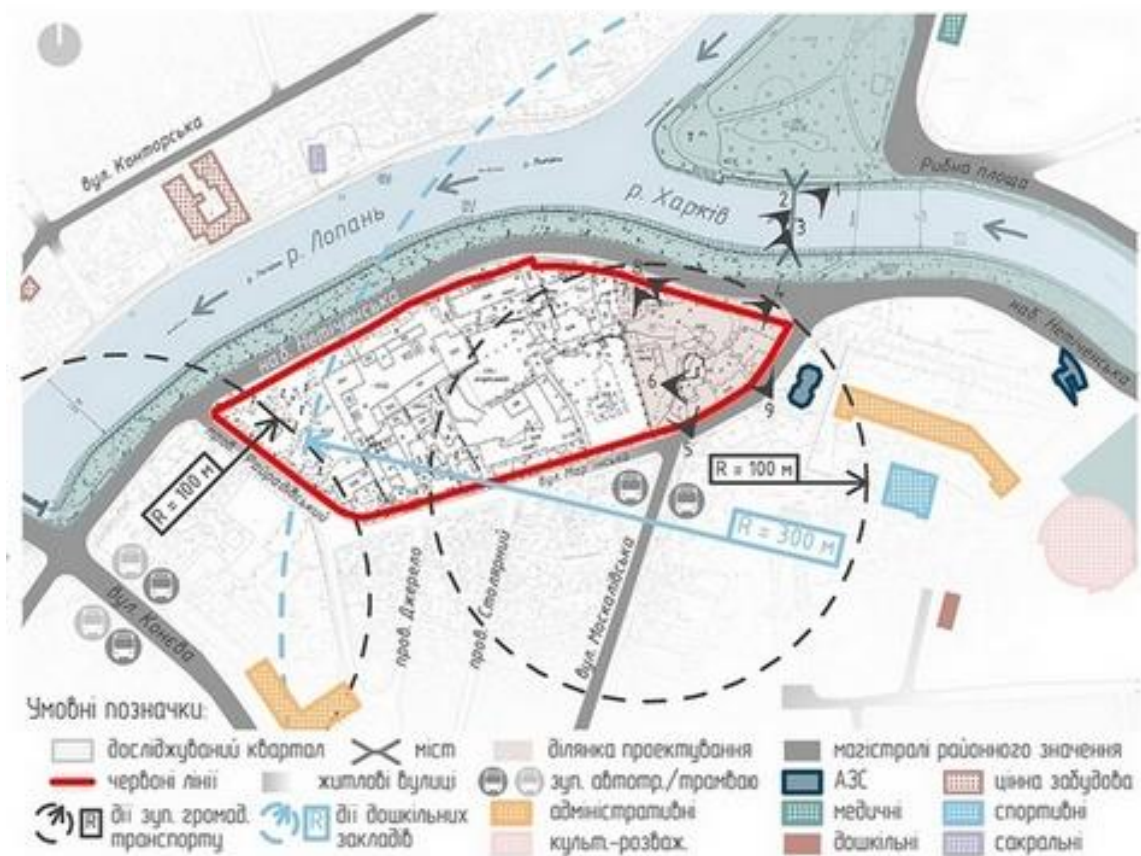


Figure A.1 – Example of the layout of the quarter in the structure of the city and district

APPENDIX B

Pre-project analysis schemes. Stage I

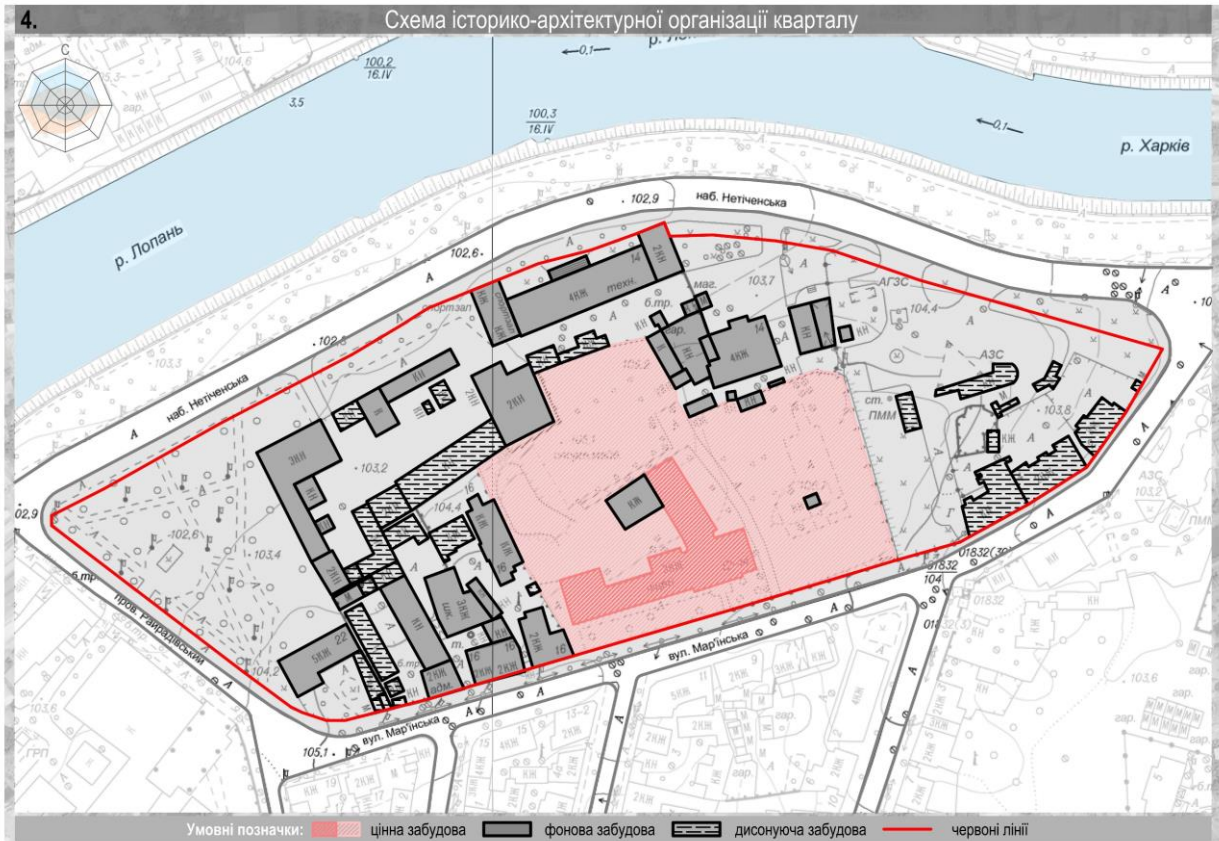


Figure B.1 – Example of the scheme of historical and architectural organization of the quarter



Figure B.2 – Example of the scheme of functional and transport organization of the quarter (existing situation)

APPENDIX C

Pre-project analysis schemes. Stage II

Схема функціонального зонування та транспортно-пішохідної організації кварталу (проектне положення) М 1:2000

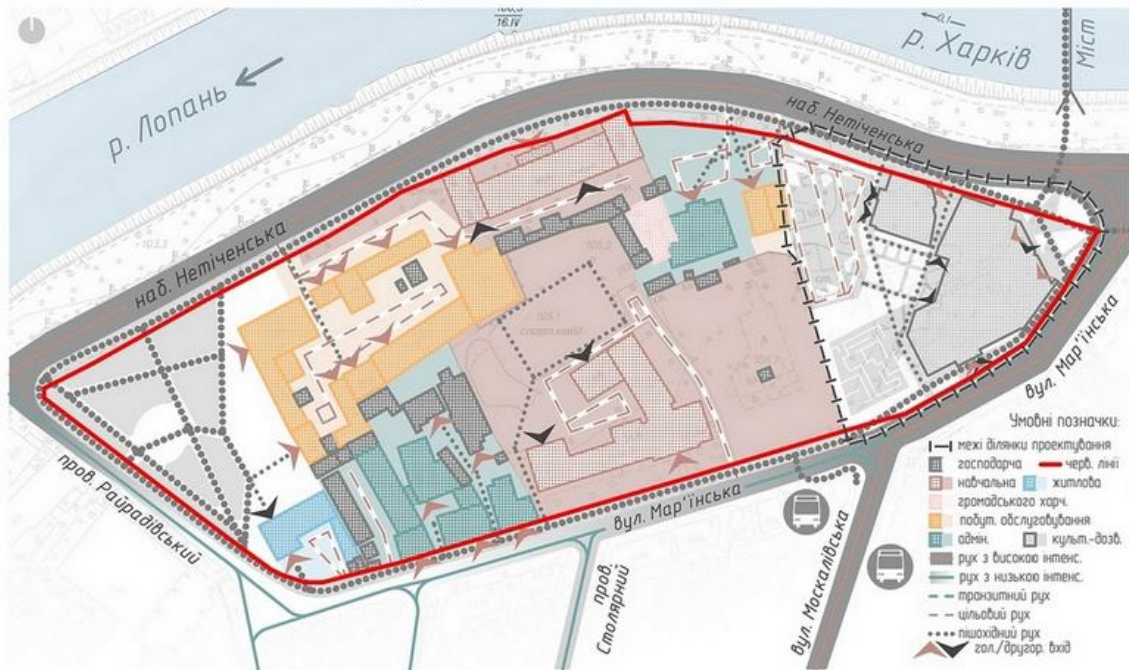


Figure C.1 – Example of the scheme of functional and transport organization of the quarter (design provision)

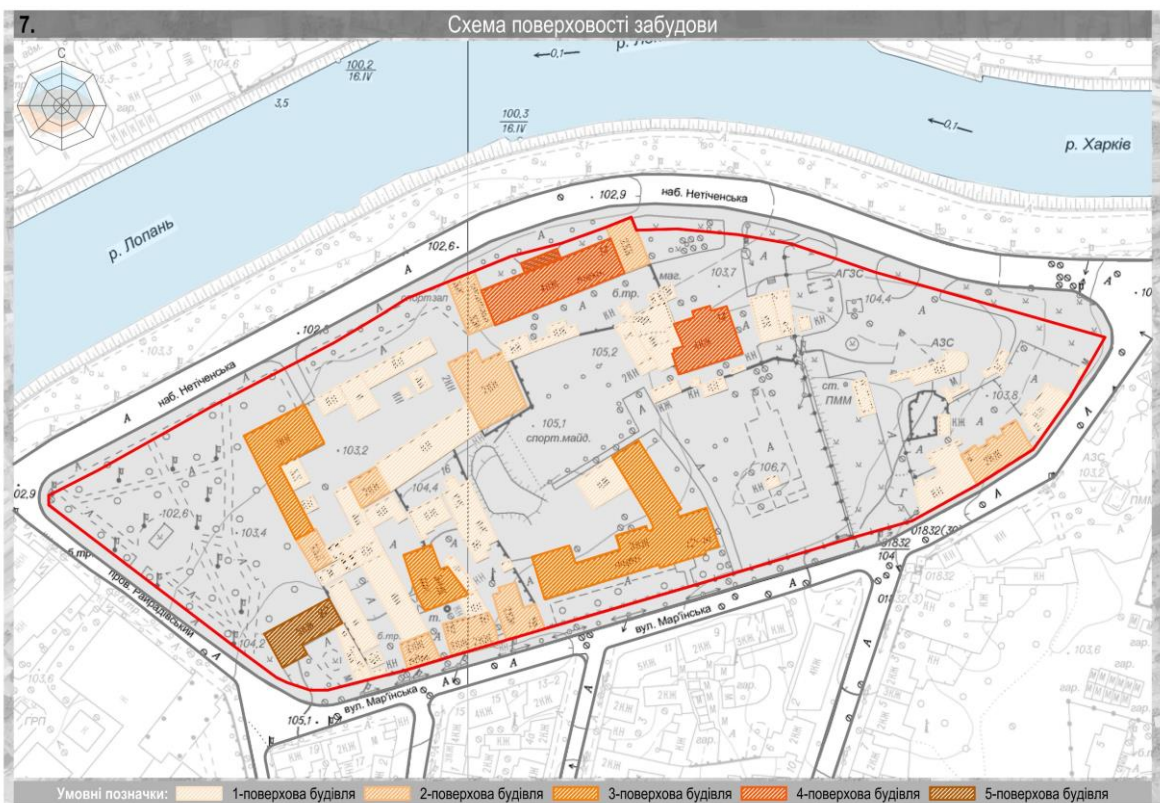


Figure C.2 – Scheme of the number of storeys of the buildings (example)

APPENDIX D

Pre-project analysis schemes. Stage III

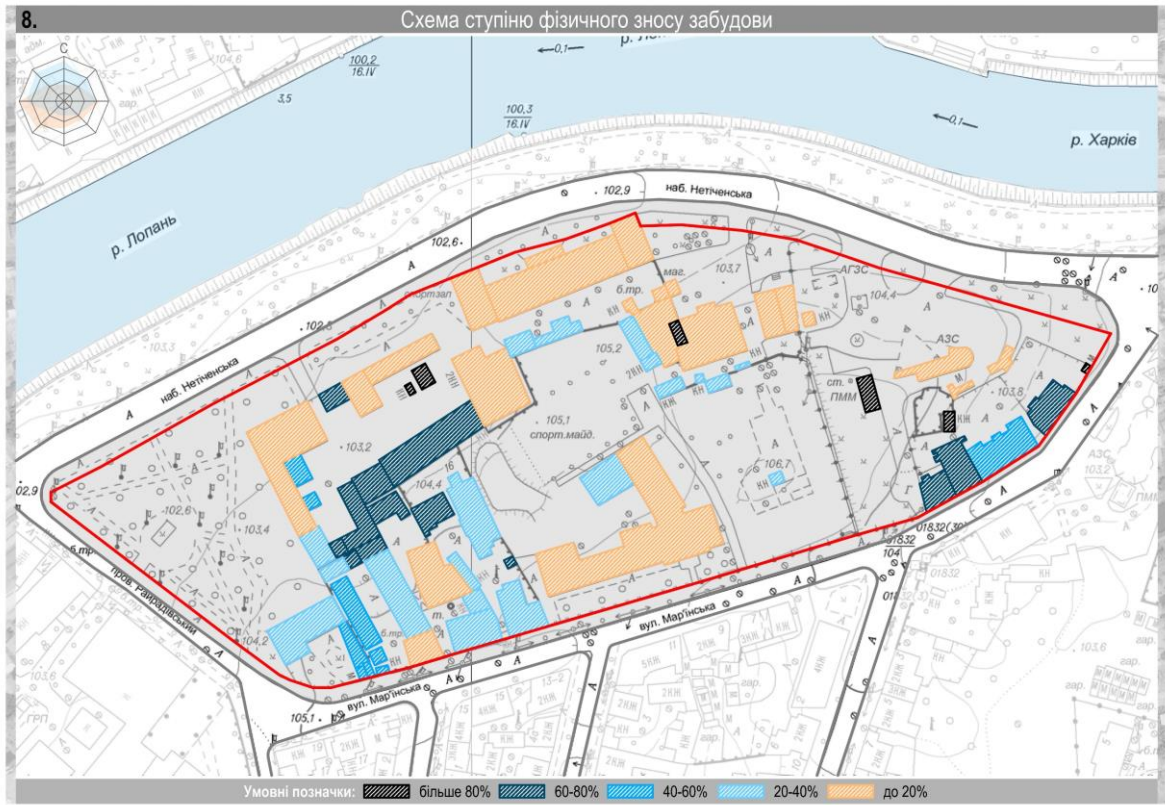


Figure D.1 – Scheme of the degree of physical deterioration of the buildings (example)



Figure D.2 – Layout of viewpoints and photofixation (example)

APPENDIX E

List and area of premises that may be part of cultural facilities

Table 1 – Composition and areas of the premises

1	2
Premises	Area, (m ²)
Cultural and entertainment halls	
Lobby with cloakroom	100
Foyer with buffet	180
Auditorium for 300 seats	250
Rooms for actors	2 × 25
Stage props warehouse	40
Film projection room	15
Ticket offices	18
Administrator's room	15
Sanitary facilities (toilets)	According to building codes DBN
Technical premises (ventilation shaft, switchboard)	According to building codes DBN
Sports and recreational block of premises	
Sports hall 18 × 24	432
Gyms	2 × 60
Billiard rooms	50
Bowling alley	100
Saunas	According to the project
Bathrooms (toilets), showers (men's, women's)	48
Locker rooms (men's, women's)	2 × 18
Instructor rooms	2 × 12
Warehouses of sports equipment	50
Doctor's room	24
Technical premises (ventilation shaft, switchboard)	According to building codes DBN
Outdoor sports grounds	According to the project
Food unit (100-seat restaurant)	
A. Premises for visitors	
Lobby with dressing room (including washrooms, toilets)	60
Anteroom	20–30
Hall	120
Banquet hall	30
Waiter room	6
Culinary shop: hall (1 workplace, utility room)	16,4
B. Production facilities	
Buffet	20
Hot shop	40

Continued Table 1

1	2
Cold shop	18
Bread-cutting room	6
Preparatory shop	12
Greenery processing shop	6
Meat and fish shop	18
Vegetable shop	15
Washing tableware	18
Service room	9
Washing kitchen utensils	9
Pantry of semi-finished products	4
Distribution room	18
C. Storage facilities	
Cooling chambers	24
Storerooms (dry products, vegetables, pickles, wine and vodka products)	36
Inventory pantry	6
Loading room	18
D. Administrative and amenity premises	
Director's office	9
Office	12
Staff premises	9
Staff wardrobe	24
Shower rooms, toilets and women's personal hygiene facilities	12
Linen room	9
E. Administrative block	
Lobby with wardrobe (including bathrooms, smoking rooms)	100
Buffet for 25 seats (utility and auxiliary rooms)	50
Exhibition halls and trade pavilions	According to the project
Waiting room	12
Director's office	18
Deputy Director's Office	15
Office rooms	24
Utility pantries	20
Repair shops	30
Transport communications	
Loading (unloading) of goods	100
Car parks: on-site parking (7 % of the working staff) parking for visitors (40–50 cars)	According to the project 480–500

APPENDIX F

Features of the auditorium design cultural and entertainment buildings

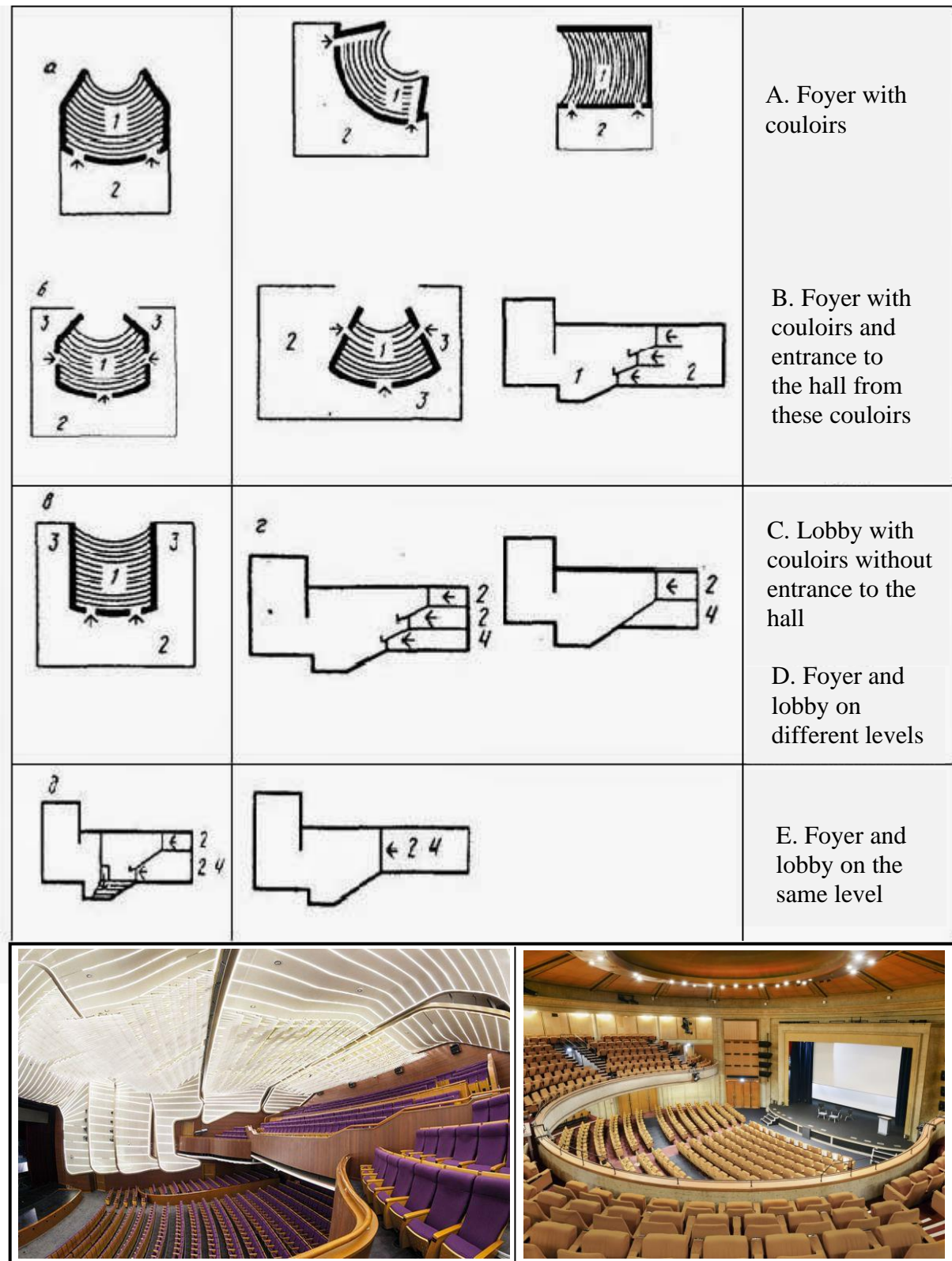
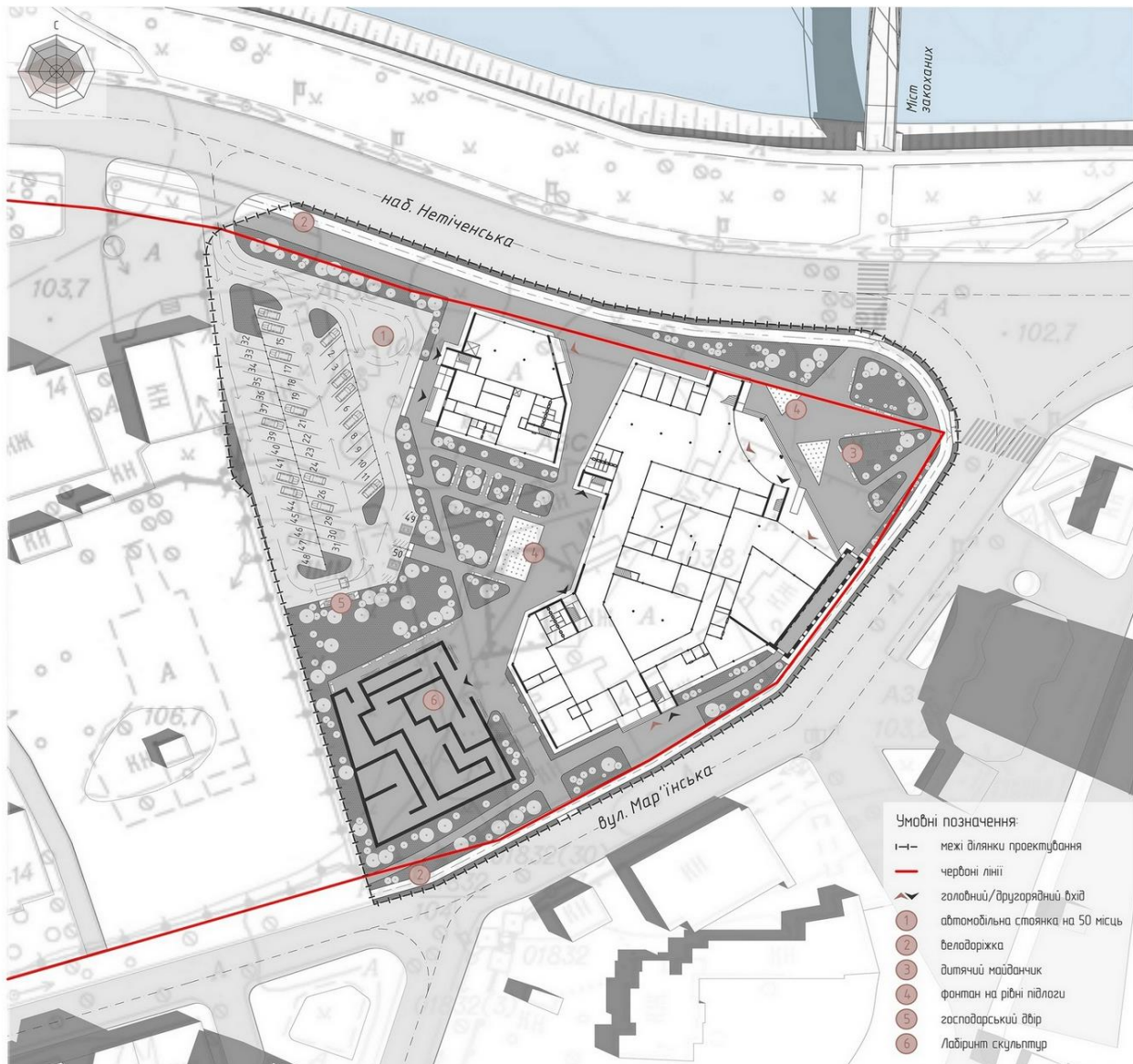


Figure F.1 – Examples of schemes for constructing a spectator complex:
 1 – auditorium; 2 – foyer; 3 – couloirs; 4 – vestibule

APPENDIX H

Design of the scheme of the master plan

Scheme of the master plan. Scale 1: 500



Calculation of technical and economic indicators of a cultural and entertainment facility

- Building area ($S_{\text{built-up}}$, m^2).
- Total area (S_{total} , m^2) – the sum of the areas of all floors (including technical floors, attic, lower ground floor and basement).
- Usable area (S_{usable} , m^2) – the sum of the areas of all premises located in the building, as well as the sum of the areas of balconies and mezzanines in the halls, foyers, etc. (the exceptions are stairwells, elevator shafts, internal open stairs and ramps).
- Estimated area (S_{est} , m^2) – the sum of the areas of all premises located in the building, except for corridors, vestibules, passages, stairwells, elevator shafts, internal open stairs, as well as the sum of the areas of the premises intended for the placement of engineering equipment and engineering networks.
- Area of enclosing structures (S_{enc} , m^2);
- Constructive area (S_{constr} , m^2) – the area occupied by the construction of walls, columns, partitions, ventilation shafts and ventilation units, as well as electrical panels.
- Construction volume of a residential building (V_{constr} , m^3).

Figure H.1 – Example of the scheme of the master plan

APPENDIX I

Planning organization of a cultural and entertainment facility

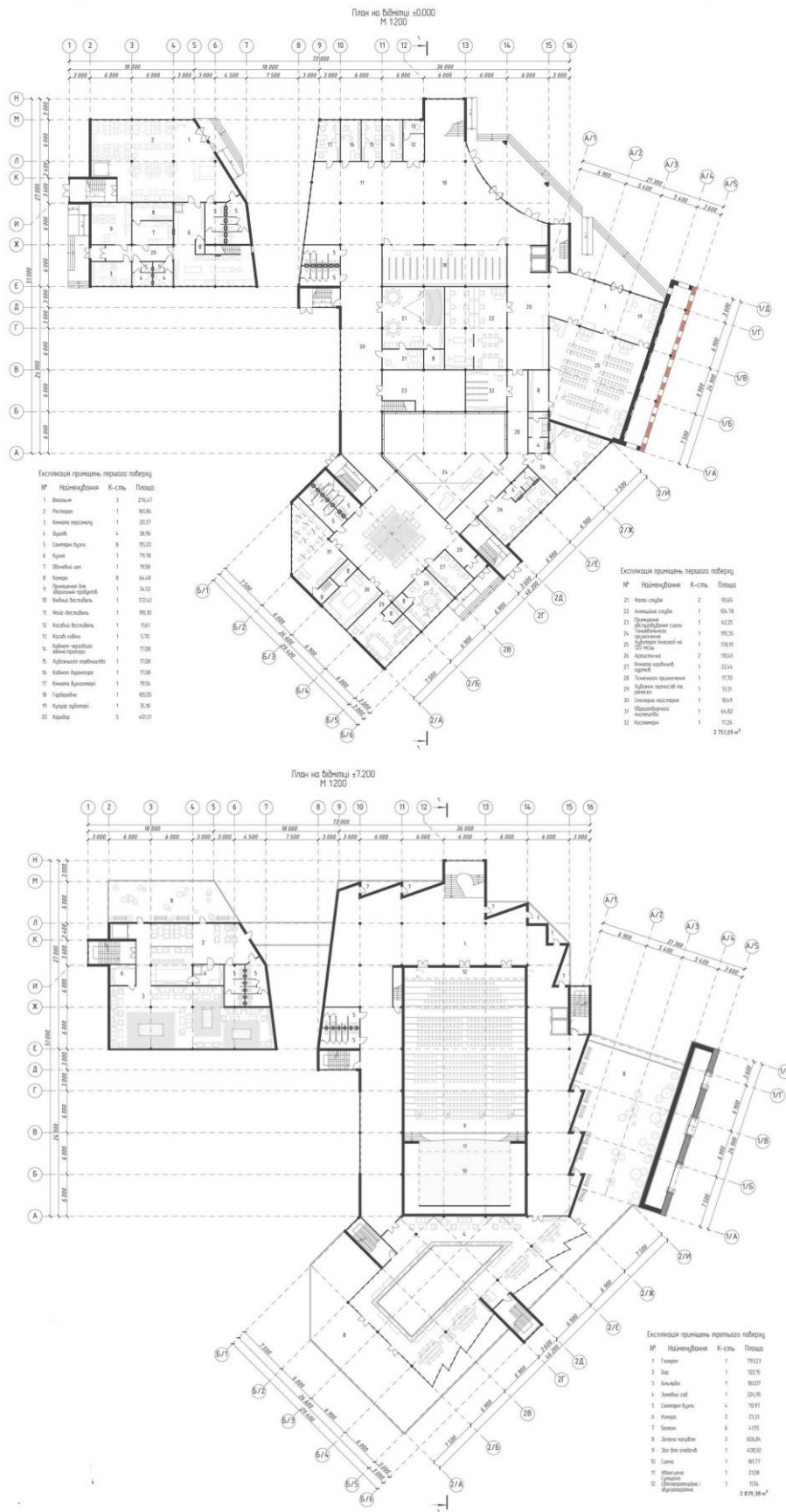


Figure I.1 – Floor plans of a cultural and entertainment facility (example)

APPENDIX J

Design of facades and a section of a cultural and entertainment facility

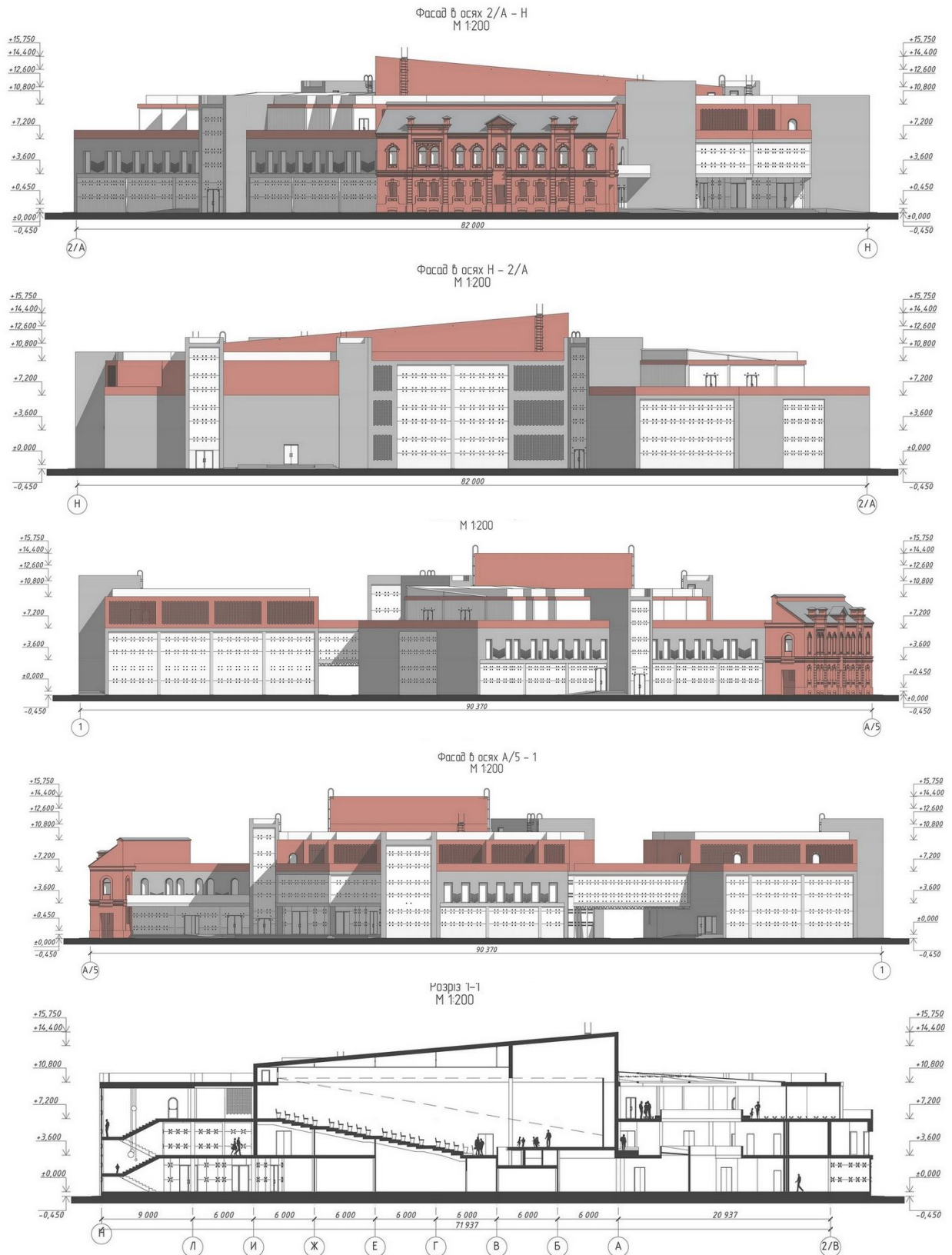


Figure J.1 – Facades and a section of a cultural and entertainment facility (example)

APPENDIX K

Visualizations of the design object



Figure K.1 – Visualization of a cultural facility from a bird's eye view (example)



Performed by student D. Auziak, supervisor – senior lecturer N. P. Silvestrova

Figure K.2 – Visualizations of cultural and entertainment facilities (examples)



Figure K.3 – Examples of choice viewpoints of a cultural and entertainment facility’s visualizations

APPENDIX L

Design of closures for the cultural and entertainment facility's project

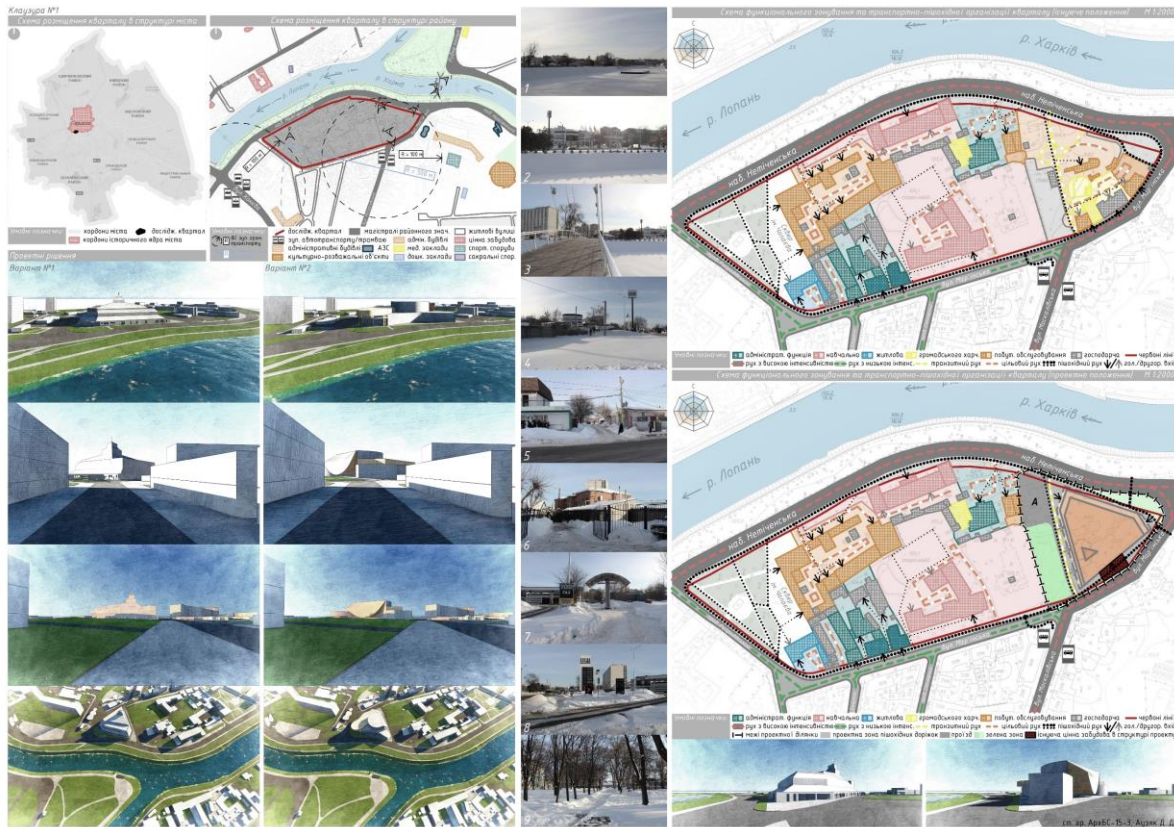


Figure L.1 – An example of the implementation of Clausura 1 (student D. Auziak)

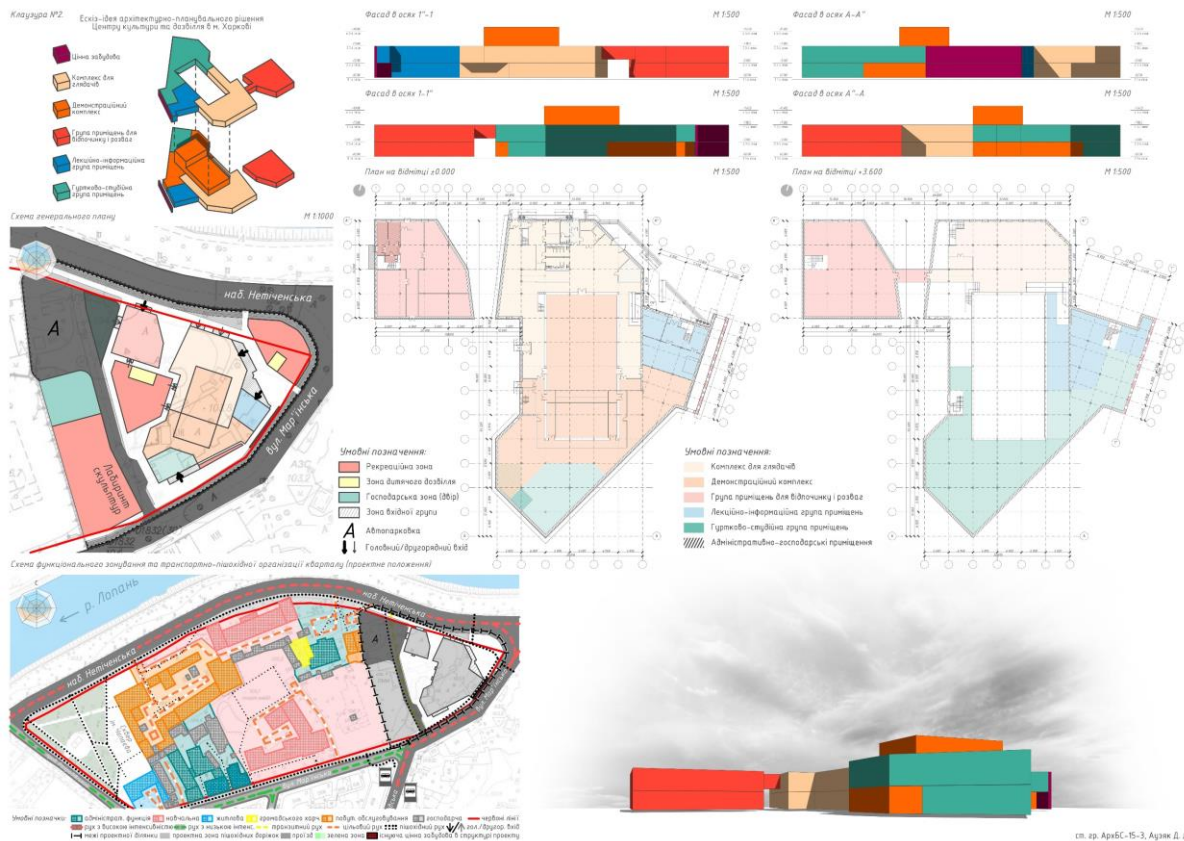


Figure L.2 – An example of the implementation of Clausura 2 (student D. Auziak)

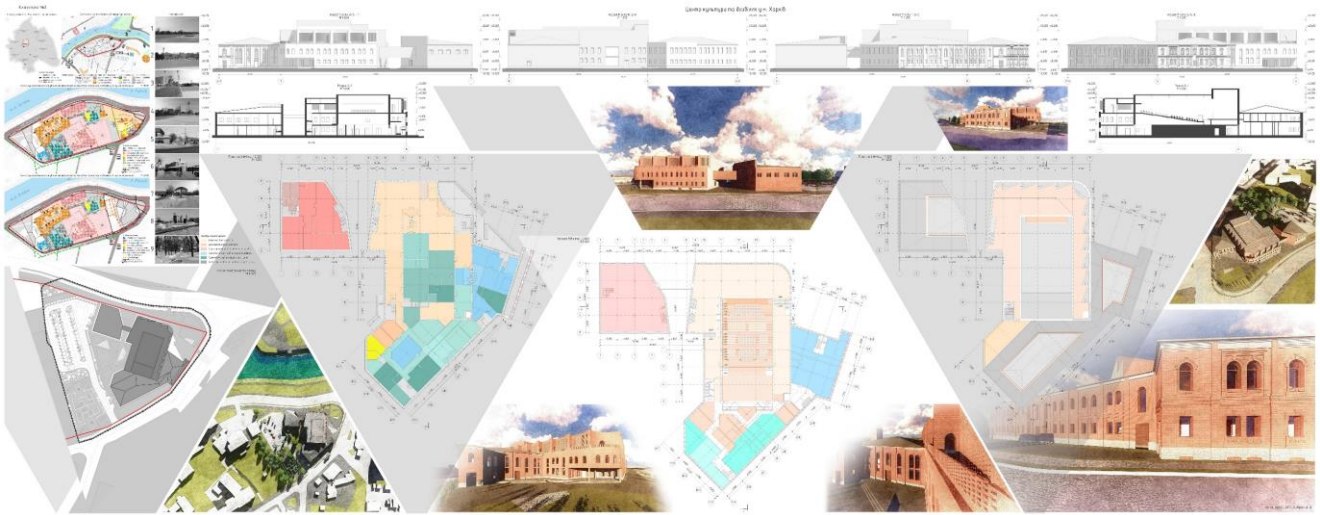


Figure L.3 – An example of the implementation of Clausura 3 (student D. Auziak)

APPENDIX M

Design of the exposition of a cultural and entertainment building’s project



Performed by student D. Auziak, supervisor - senior lecturer N.P. Silvestrova

Figure M.1 – Complex design of the exposition of the project “Cultural and entertainment facility with an auditorium for 300 seats” (example)

Виробничо-практичне видання

Методичні рекомендації
до проведення практичних занять та організації самостійної роботи
з навчальної дисципліни

**«АРХІТЕКТУРНЕ ПРОЄКТУВАННЯ БУДІВЕЛЬ І СПОРУД:
КУЛЬТУРНО-ВИДОВИЩНА СПОРУДА
З ГЛЯДАЦЬКИМ ЗАЛОМ НА 300 МІСЦЬ»**

*(для здобувачів третього курсу денної форми навчання
першого (бакалаврського) рівня вищої освіти
зі спеціальності 191 – Архітектура та містобудування)
(АНГЛ. мовою)*

Укладачі: **СМІРНОВА** Ольга В'ячеславівна,
БОЖИНСЬКИЙ Богдан Іванович,
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