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Creating a Multi-Functional Public Facility in Jegunovtse, North Macedonia: A Fusion of Theatre, Culture, and Administrative Spaces

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Abstract

The objective of this research is to provide an overview of the architectural concept and execution of a building that effectively combines administrative and cultural functions. The construction of the building took place in Jegunovtse, Republic of North Macedonia, covering an area of 19911 m2 and including 796 units.

The primary aim of this project is to provide a harmonious operational integration inside a building that encompasses three distinct functions: theater, culture, and administrative spaces. The proposed project includes a subterranean area designated for technological infrastructure and storage purposes. Multipurpose rooms occupy the ground level, while administrative functions occupy the first floor.

The methodology employed in this study comprises three primary phases. The initial phase entails conducting a thorough and meticulous analysis of the site. As a result, the second phase entails the creation of a strategic functional program. Finally, the third phase includes research into the selection of materials and techniques in conjunction with construction.

The findings indicate that the architectural layout of the facility demonstrates a high level of adaptability in accommodating many uses, including but not limited to communal gatherings, theatrical presentations, and community gatherings. The multi-purpose hall enhances versatility by including telescoping stands and flexible seats, allowing for efficient adaptation. One noteworthy architectural element is the integration of detachable partition panels, which provide versatility in extending the hall into an outside area, creating a delightful summer ambiance.

In conclusion, the establishment cultivates a sense of community engagement by providing a flexible environment that may support various cultural and administrative programs. This project demonstrates the notable outcomes achieved via the use of adaptive design principles in the development of adaptable public spaces.

Keywords: architectural design, public facility, multi-functional space, Jegunovtse, North Macedonia

Introduction

It is critical to prioritize the creation of public facilities that can serve both administrative and cultural purposes in order to promote community involvement and improve local infrastructure. This project represents a significant advancement in Balkan architecture, which often strives for a harmonious fusion of traditional elements and contemporary practicality. Situated in Jegunovtse, North Macedonia, the recently established multi-purpose facility seeks to meet the urgent demand for adaptable public spaces in the area.

Jegunovtse, a village in North Macedonia, has been in need of a space that can serve as both a municipal administrative center and a hub for cultural activities. The original intention of the current infrastructure, including a municipal building, was not to accommodate a diverse array of public activities or promote community engagement. Therefore, there was a requirement for a facility that could act as a central point for both governance and cultural enhancement.

The main goal of this project was to create a building that effectively combines administrative offices with a cultural venue. The facility had to be versatile enough to accommodate a range of activities, such as municipal meetings, theatrical performances, and cinema screenings. Creating a versatile hall for various purposes, optimizing functionality through careful spatial planning, and designing a building that blends seamlessly with the surrounding architectural style were the main objectives.

This project holds significant importance in the realm of Balkan architecture, showcasing a contemporary perspective on seamlessly incorporating various functions into one building. The facility sets a precedent for future public buildings in similar environments by integrating modern design principles with the rich architectural traditions of the region. The design of this project demonstrates a strong dedication to improving community life by creating adaptable, user-focused spaces that accommodate a wide variety of activities and encourage cultural and administrative involvement.

Project Description

The facility is located at KP 830/6, KO Jegunovtse, with a plot area of 1911 m^2. The location features flat terrain, and the building is designed as a free-standing structure on this plot. The construction will adhere to urban planning parameters set by the municipality's competent authority. On the plot, there is an existing Municipal Building of Jegunovtse Municipality, which occupies part of the designated area

for public administration (B4) with possible compatible uses, including a theater, house of culture, or cinema hall (B3).

The facility is intended for public administration (B4) with a compatible purpose, including uses such as a theater, house of culture, or cinema hall (B3).

The basement will primarily serve as a technical room housing all the building's installations. A separate room of 19.7 m^2 will accommodate mechanical, plumbing, sewage, and thermal engineering systems. Access to the basement is via two communication units: a stairwell and an elevator. The larger space in the basement will be used for the storage of materials and elements required for stage performances. The floor will be covered with ceramic tiles, the walls will be plastered, and the ceilings will be finished with the same material as the walls. There will be an opening in the machine room for ventilation.

Figure 1

3D model of the building

The ground floor features a multi-purpose hall with a stage and auditorium. It includes two main entrances: one for the multi-purpose hall and another leading to a stair core that connects to the first floor, accessible from both outside and inside. The main entrance for events is on the south side, leading to the lobby. An additional entrance/exit will provide separate access to the existing municipal building and facilitate efficient movement during events. The multi-purpose hall is designed to accommodate municipal council sessions, theatrical performances, and cinema screenings. It features telescopic tribunes and movable chairs, allowing for flexible seating arrangements. The space can be adapted for various functions, with a pantry for storage and equipment rooms accessible via stairs.

Figure 2.

Ground floor plan

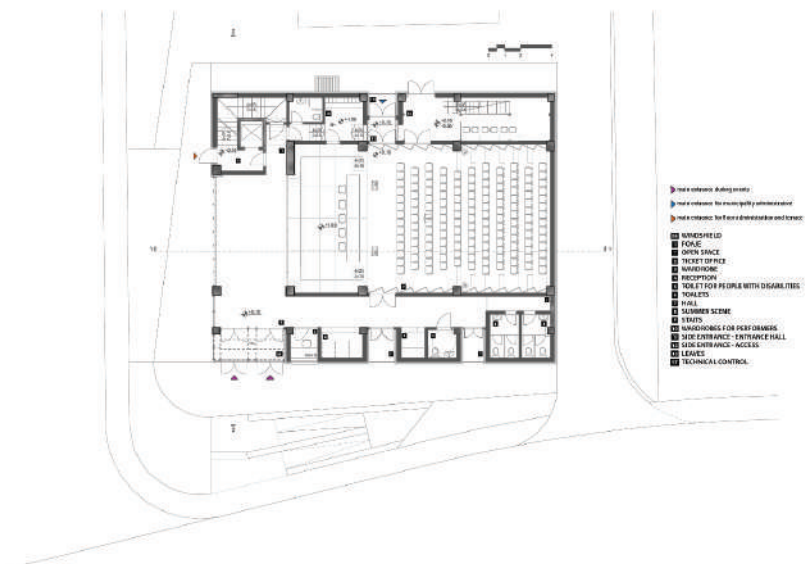


Figure 3.

Functions of the multipurpose building

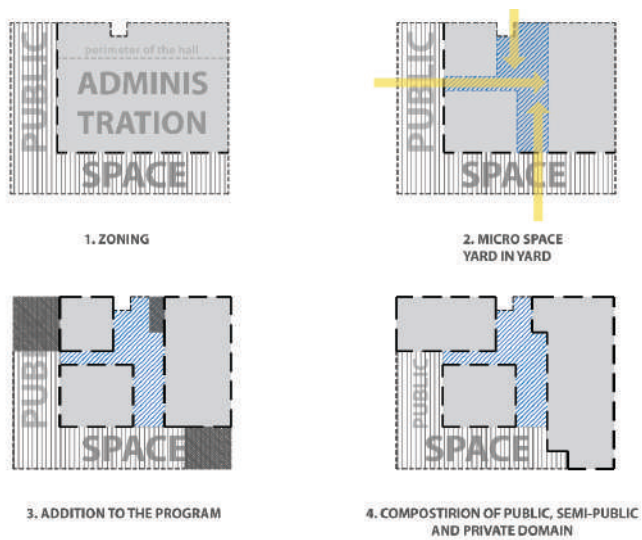
The first floor contains administrative offices, a manager's office, a common room for employees, and a bar. It is divided into two zones: a publicly accessible roof terrace for visitors and an administration area enclosed by a semi-open atrium. The floor also includes a paved terrace, a green roof area, and internal raised floors. The floor houses one of the building's main thermomechanical units for cooling and heating. All details of the floors and green areas must follow the Basic Project's drawings and specifications.

Figure 4.

First floor plan

Figure 5.

Terrace and administration concept diagram

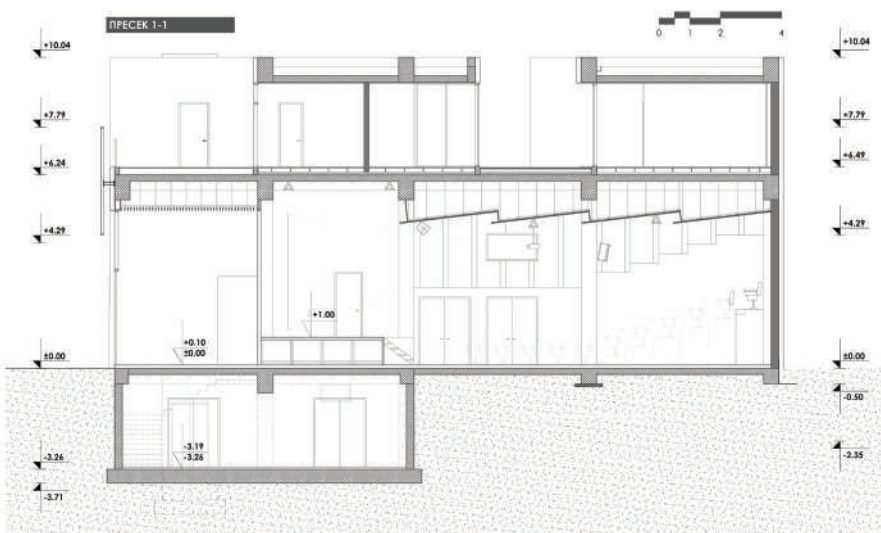


The roof will be flat and constructed using various materials for hydro and thermal insulation. The load-bearing beams of the final roof plate will form a trough for insulation, which includes hydro and thermal layers, cement screed, and gravel for protection. Drainage will be provided to allow atmospheric water to flow freely.

The building will be constructed in phases using modern materials. Concrete and reinforcement, with additives for waterproofing, will be used. Partition and main walls will be made of ceramic hollow brick, and Thermo-Clima Block will be used for facade parts. GKP (gypsum cardboard tiles) panels will be used for sound insulation and mounted on a metal substructure. Montage panels between the main stage and the foyer will be movable to allow access from the outside. The main stage will have assembly stages that can be dismantled as needed. Telescopic stairs in the auditorium will provide flexible seating arrangements, with a height difference of 30 cm between rows and a width of 90 cm.

Figure 6.

Section of the multipurpose building

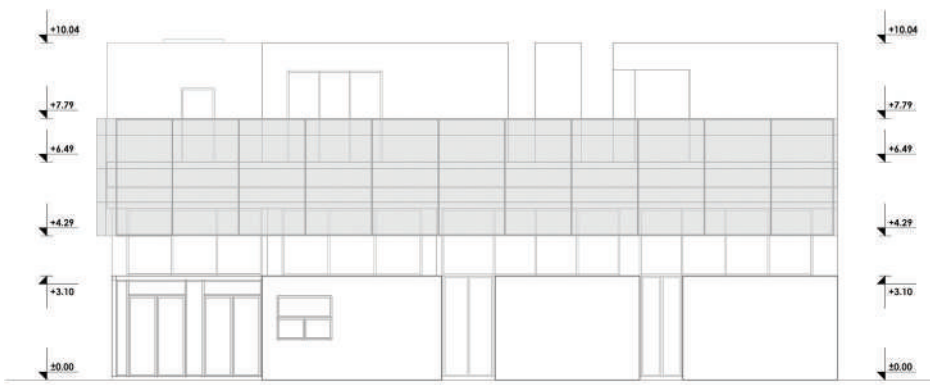


The ground floor will feature waterproofing, a concrete slab, thermal insulation, cement screed, and finishes such as ceramic tiles or carpet, depending on the room. The roof will have hydro and thermal insulation, with green roof surfaces and raised floor layers. Wall and ceiling surfaces will be plastered in two layers, polished, and finished with polycolor paint. Sanitary facilities will have ceramic-tiled walls. Aluminum semi-structural facade joinery will be installed throughout.

The facade will be treated with thermal insulation (hard-pressed styrofoam d=10 cm), mesh with plaster (glue), and paint. A metal perforated secondary facade surface will cover the southern and western facades. The facade will be constructed in layers, starting with thermal insulation mounted on an aluminum structure, followed by a waterproofing and protective film, and finished with fiber cement or HPL panels (6 mm thick); color, and details to be confirmed with the main designer. Rainwater drainage will be managed with vertical and horizontal gutters made of galvanized sheet metal.

Figure 7.

Facade of the multipurpose building



The building's design reflects its role as a cultural and administrative hub for Jegunovtse. The public spaces, including the entry hall (foyer) and multi-purpose hall, are central to the building's concept. The hall, designed to accommodate various seating arrangements, supports different types of events such as municipality meetings, dance rehearsals, workshops, and cinema screenings. Transformations are straightforward and user-friendly. Mobile partition panels on the west side allow the stage to open to the outdoors, creating an open auditorium. Additionally, a public roof terrace accessible via a staircase provides extra public space and houses administrative offices around a semi-open atrium.

Figure 8.

Night render of the multipurpose building

Methodology

We organized the project's methodology into three primary phases: research, design, and implementation.

Research Phase: The first step in the research process was to carefully examine the project's context, requirements, and limitations. We conducted a contextual analysis to gain a deeper understanding of the geographical, cultural, and social aspects of Jegunovtse. This analysis played a crucial role in identifying the community's needs and expectations for the new facility. We also conducted a thorough examination of urban planning regulations, building codes, and municipal guidelines to ensure adherence to local authorities. We evaluated various design approaches and technologies, considering the project's financial constraints.

Design Phase: In the design phase, our main objective was to transform the research findings into a detailed architectural and functional plan. We began the process with conceptual design, generating initial design concepts to achieve the project's objectives, such as space planning and layout design. We undertook an architectural design process, developing intricate plans and 3D models to clearly

visualize the building's structure and purpose. This stage involved implementing strategies to optimize space usage, carefully selecting materials, and integrating sustainability principles, such as incorporating energy-efficient design elements and using sustainable materials. The engineering design component focused on creating detailed plans for various systems, including structural, mechanical, electrical, and plumbing. The main objectives were to ensure the integrity, safety, and efficiency of these systems.

Implementation Phase: During this phase, the focus was on bringing the design to life through construction and realization. Effective project management played a vital role in supervising the construction process, guaranteeing compliance with design specifications, meeting deadlines, and staying within budget. This phase involved preparing the site, constructing the building, and ensuring quality control to meet all necessary standards. During the interior finishing process, we meticulously installed the final fixtures and furnishings, followed by thorough system testing to ensure optimal functionality. We successfully completed the project by finalizing and commissioning the facility, providing all necessary documentation, and handing over the facility to the municipality for operational use. Throughout the project, there was a strong emphasis on incorporating continuous feedback and making revisions to address any emerging issues and improve processes as necessary.

Review of Examples

Multipurpose buildings are envisioned as dynamic community centers designed to support a broad spectrum of public uses and cultural events. Each building offers a flexible interior layout, accommodating everything from large gatherings and performances to intimate workshops and community meetings. With adaptable open spaces featuring retractable partitions, these buildings can be easily reconfigured to suit events of varying scales, while acoustic-enhancing materials ensure high-quality sound experiences. The buildings prioritize accessibility, ensuring an inclusive experience for all visitors. These multipurpose buildings serve as cultural anchors within the community, encouraging creativity, connectivity, and shared experiences across diverse events.

Figure 9.

Multipurpose Building / GSMM Architetti [https://www.archdaily.com/216981/multiporpuse-building-gsmm-architetti]

The purpose of this building is to provide the small town in with its located with a visual landmark. The features of its personality softly emerge without direct imposition on the environment. Its multifaceted roof structure, which looks like pleated paper, is immediately recognizable and represents a clear statement of public and representative architecture.

Figure 10.

CinemadeRiom/TRACKS[https://www.archdaily.com/924772/cinema-de-riom-tracks]

The new multi-cinema project will take place at the future site of the "Jardin de la Culture" close to the historic city center of Riom. Once this cultural enclosure, was the "Redemptoristine convent's garden".Nowadays, this new program offers: a multimedia library project, a music school (reconversion of old convent) and the cinema project.

Results and Outcomes

The facility blends harmoniously with the flat terrain and the existing municipal building, creating a seamless integration from an architectural standpoint. The design prioritizes accessibility and functionality, featuring a versatile hall that can accommodate a variety of events. Telescopic tribunes and movable chairs equip the hall, enabling easy adaptability to diverse events like council sessions, theatrical performances, and workshops.

The project also includes cutting-edge technology and environmentally friendly features. Modern insulation materials equip the flat roof, ensuring efficient thermal and hydroelectric insulation. The incorporation of AB construction with concrete and reinforcement, along with thermo-clima blocks and gypsum cardboard panels, showcases the latest trends in construction techniques. In addition, the green roof and energy-efficient systems help enhance the building's sustainability.

The design of the facility effectively establishes separate areas for public and administrative purposes. The roof terrace, available for visitors, enhances the administrative offices located in a partially open atrium. This setup improves public engagement and streamlines administrative processes, strengthening the facility's impact on the community.

Visual documentation, including architectural renderings and photographs, highlights the facility's modern design and functional spaces. The exterior images showcase how well the building blends in with the natural surroundings, while the interior photos give a glimpse of the flexible multi-purpose hall and administrative spaces. The post-completion data indicates a significant utilization rate for community events and municipal activities, with users providing positive feedback on the building's adaptability and success in fulfilling diverse requirements.

In Jegunovtse, the new facility has greatly influenced the community by offering a central location for cultural and administrative events. It has transformed into a center for community involvement, facilitating a wide range of events and nurturing the growth of local culture. The seamless combination of contemporary design and eco-friendly practices establishes a model for upcoming architectural endeavors in the area.

Discussion

The completion of the multi-purpose facility in Jegunovtse is a remarkable accomplishment in contemporary architectural and urban planning, combining practicality, environmental consciousness, and visual attractiveness. This project has successfully met the community's needs for a flexible space that caters to public administration, cultural events, and recreational activities. The design's versatility, with features such as telescopic tribunes and movable chairs, has been advantageous in accommodating a wide range of events, from municipal meetings to theatrical performances and cinema screenings.

The building's seamless integration with its surroundings and incorporation of cutting-edge construction materials, like thermo-clima blocks and green roofing, showcase its dedication to promoting sustainability and maximizing energy efficiency. The successful implementation of these technologies not only improves the facility's environmental performance but also sets a precedent for future developments in the region. The flat roof and advanced insulation of the building enhance its energy conservation, and the addition of a green roof further demonstrates its commitment to the environment.

The community has responded with tremendous enthusiasm, expressing their appreciation for the building's adaptability and its contribution to fostering cultural involvement. The facility has emerged as a focal point for a wide range of activities, showcasing its exceptional design in catering to the diverse requirements of Jegunovtse's residents. The incorporation of public and administrative areas, along with the addition of a roof terrace that is open to the public, has created a stronger sense of community and offered valuable spaces for socializing and engaging in civic activities.

Overall, the multi-purpose facility successfully serves its intended purposes and showcases a commendable commitment to environmentally-friendly design. The success of this project highlights the significance of taking into account practical requirements and environmental consequences in architectural endeavors. Future developments can learn from this project's innovative approach, using it as a model for incorporating functionality, community engagement, and sustainability in building design.

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