



Construction of Unique Buildings and Structures



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Design of complex family winery

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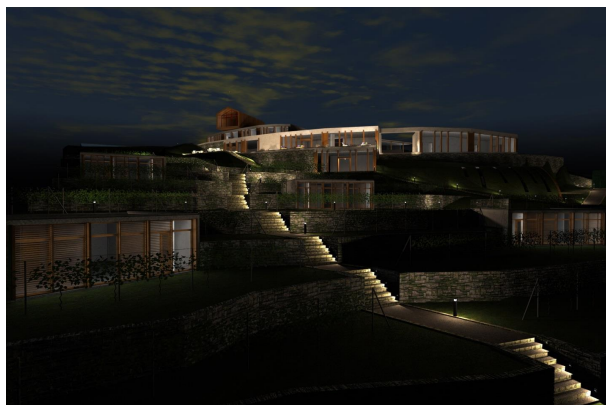
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ABSTRACT



This paper presents a project developed by students from Faculty of Architecture of the University of Montenegro. The object of design – is family complex for the production of wine. In the present project highlights issues grape processing technology, production and storage of wine. Details of designed volume are dimensional solution of the complex in close relationship with the existing topography, which is designed for the complex. Planning solution provides a close connection of the plant site and cellars for wine storage with the house owner. The closest natural landscape, including groundwater terraces for vineyards and houses for living wage workers was worked out in detail.

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Introduction

A number of researches devoted to the problem production of wine [1-15]. Issues of growing vineyards are devoted work of eminent scientists [16-20].

Wine tourism in Montenegro is increasing the development and occupies a significant place in the tourist industry, particularly in the Mediterranean area, and thus meets requirements of clients who want to learn about wine regions and participate in the production process. Taking all the above into consideration terms of reference included following functional areas: wine shop, wellness center? Accommodation, wine tasting, administration, gazebo and restaurant.

The project wine complex designed to accommodate in the village Zagarač, located 19.4 km from Podgorica and belongs Danilovgrad area. Position of the complex is planned near the family house - the local road. Vineyards are provided around the southeast side of the building, but they are drawn into the complex domain in which there are the accommodation-apartments. Village Zagarač has a favorable climate for growing grapes. Vineyard area occupies 60 000 m² which indicates capacity of the winery - 60 000l of wine.

The project small wine production complex includes:

1. Production facility for the processing of grapes;
2. Fermentation, aging and storing wine;
3. Quality control and laboratory analysis;
4. Technical facilities (storage techniques and containers);
5. Utility rooms for workers (toilets, showers and dressing rooms);
6. Receiving visitors and wine shop;
7. Tasting room;
8. Wellness Center;
9. Administrative offices and administration;
10. Restaurant with kitchen;
11. Economic Zone - warehouse space for the employees in the kitchen;
12. Four of accommodation – apartments;
13. Parking spaces for employees and visitors.

In addition to the manufacturing process for making wine, which is listed as the primary content of the object, terms of reference provided that the winery has additional content, which would affect development of wine tourism?

Project performed functional zoning in accordance with technological process. This complex is intended for homeowners who want to have direct access to the wine cellar.

Looking at the location it can be seen that the ground running, as in the transverse and in a somewhat milder form in the longitudinal direction. The cross section of the field is provided in the west - east and longitudinal extending south – north.

Looking at it closer, the object should be placed near the family home, but in a way that does not threaten. On the other hand, the object should be to attract visitors and interested in them. Street that appears between the family home and the wine cellar of the winery dictates position and enter the facility. The building follows the street along its entire length, and covers the hillsides. Using a slope greater part of the building is buried, which is characteristic of houses in this area.

In front of the building, looking at the street side there is a plateau-square, which is suitable for the reception of large tourist groups, and to facilitate the delivery of raw materials at the time of the grape harvest. From this plateau that separates one part of the production zone of restaurants, you can enjoy the view of the vineyards and the rural landscape. The building can be seen from all sides because it provides some walking trails that still separate the path to the vineyards from which one passes and the apartment. Figure 1 shows situational plan site.



Figure 1. Situation plan of the territory

Figure 2 shows a plan of the buildings on the elevations - 6.20 m; -7.00 m; -9.20 m; -12.20 m.

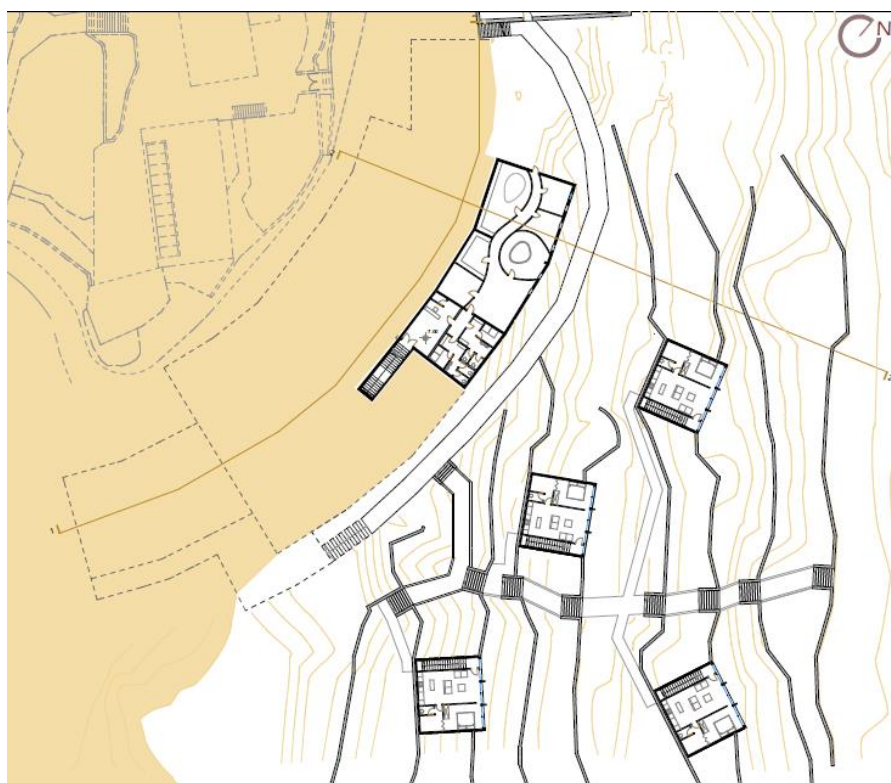


Figure 2. Plan of the buildings on the elevations -6.20 m -7.00 m -9.20 m -12.20 m

This appendix shows the position of wellness and its contents - especially the treatments are grapes, wine bath, massage and sauna. The apartments are designed as separate accommodation units - single family. Are partially buried and sealed on 3 sides, while their fourth frontal side facing slope glazed. Zone inside the apartment are clearly divided into day and night. Get in apartments is resolved through the roof, down the stairs down, and the entry to the building exudes a touch of mystique because the visitor does not know what to expect - is a dark basement or still an open structure towards the panorama, what is really. Figure 3 shows a plan of the buildings on the elevation - 4.00 m.



Figure 3. Plan of the buildings on the elevation - 4.00 m

On this floor is located the whole process of wine production, with the exception of the reception of grapes, which takes place on the floor above. Rooms for workers - toilets, changing rooms, and facilities for disposal of technical equipment are housed in an existing building with a separate entrance. The newly designed facility builds on existing and begins the process of production.

The first room in which we find is a fermenter, so it has room for storing wine. Bottling with storage containers are situated nearby. Furthermore the production process takes place in the room to store wine in bottles next to a laboratory for quality control of wine. Sanitary facilities for employees and visitors are in the immediate vicinity.

Presentation of wines and wine tasting room are situated from the production zone to enter into an open space containing Barrique barrels, an archive of selected wines, a. The tunnel leading to the adjacent existing building starts on the floor, and is located in barriques barrels. This path is a great advantage for investors who may at any time visit barrik basement of the family home and this direct path.

Access to visitors at this level is enabled through the main communication with the ground, which are located in the main lobby. Also visitors from this level have access to the wellness center.

Tasting room is open to the east, i.e. towards the slope of the hill, and from it can go out and walk on trails through the vineyards to the apartment, or the sports zone.

Figure 4 shows lines of movement in the complex. Bordeaux color is represented by the line movement process of making wine. Ocher I indicated movement of workers. The green color is represented by the movement of visitors, and the blue color represents the connection to the neighboring building.

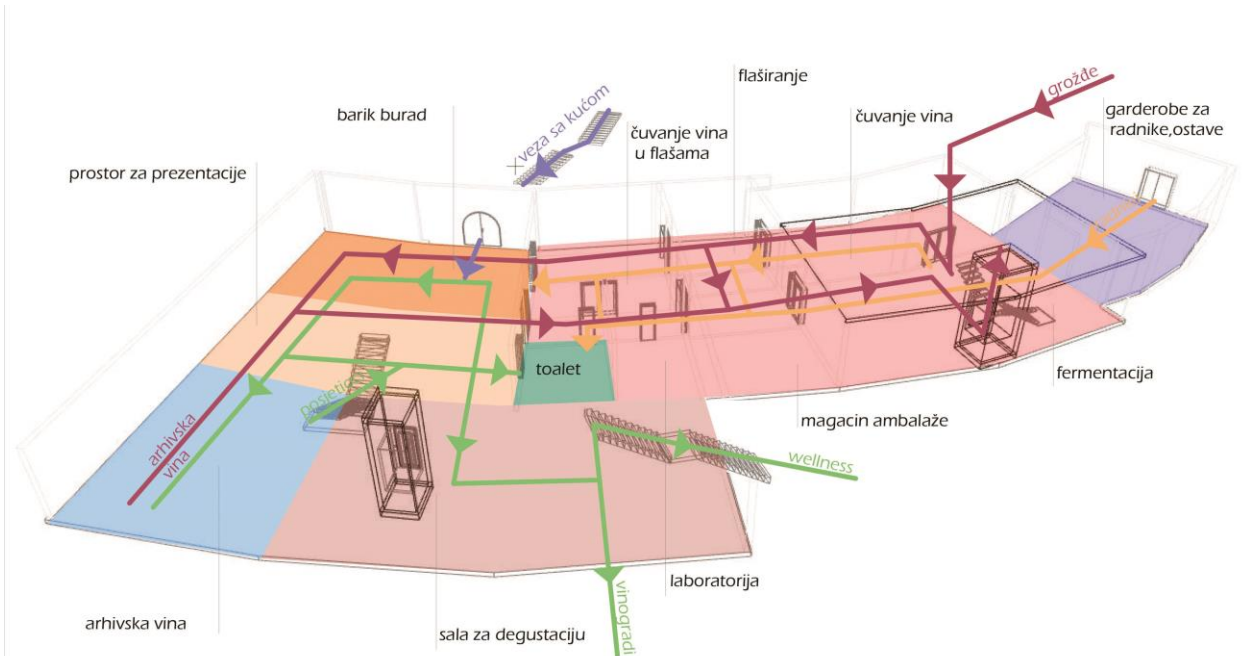


Figure 4. Lines of movement in the complex



Figure 5. Plan of the buildings on the elevation 0.00 m

This floor is clearly physically divided into a production zone - that area for the delivery and reception of grapes and commercial catering area - where most of the content is subordinated to visitors.

On this basis, there is the main entrance to the building - for visitors and employees of the administration. Entering the main hall visitors are faced with a reception and wine shop machine. For this part can access the restaurant and the restaurant terrace. On this floor is located the restaurant and kitchen. Here is vertical communication for access to their floor above for employees in the administration. Figure 6 shows a plan of the buildings on the elevations - 4.00 m; +4.00 m; 7,00 m.



Figure 6. Plan of the buildings on the elevations - 4.00 m; +4.00 m; 7,00 m

Based on the floors at a height of +4.0 m is situated administration, with the necessary facilities: enologist, accounting, directors and boardroom. There is also entrance to the kitchen, which is located below. Floor is set back from the floor below with a green roof. The object is made of cascades and retaining walls.

Belvedere is designed as a space to the highest point, which offers the best view of the vineyards and city Podgorica. Belvedere can be accessed by elevator to all floors. In addition to an elevator in the administrative zone lookout you can come cantilever stairs are made of glass.

Figure 7 shows the main section of the building. It shows the different zones of the object. At a height-4m is located beside the room for workers in the field, the production process of creating wine storage and wine in barrique barrels. At a level of 0.00, we see that the space for intake of grapes separated compared to the other part of the building which houses the main lobby with a reception, Wine Shop, restaurant and kitchen.

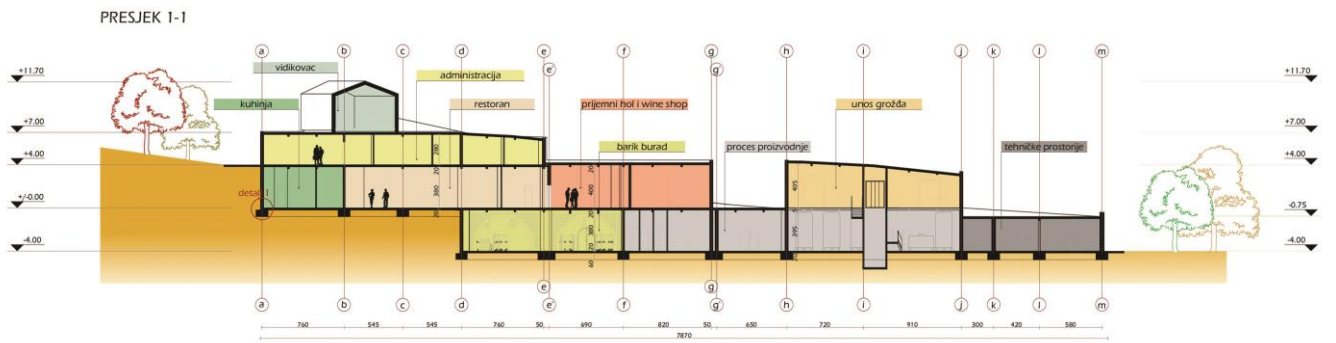


Figure 7. The main section of the building

It shows the manufacturing process of making wine, and wellness. The structure of the building consists of reinforced concrete canvases widths 30 and 20cm. The floor joists monolithic reinforced concrete slab 20cm thick, which is part of a range of more than 6m strengthened with reinforced concrete ribs on the principle of every 3m one rib. Construction belvedere assembled steel and composite profile of the frames. Construction Wellness center is cylindrical vault thickness of 16 cm.

Façades of the building



Figure 8. The eastern facade of the complex



Figure 9. North facade of the complex



Figure 10. Model of the complex. Restaurant.



Figure 10. Model of the complex



Figure 12. Night lighting of the object model



Figure 13. Night lighting of the object model.

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Проект комплекса семейного винодельческого предприятия

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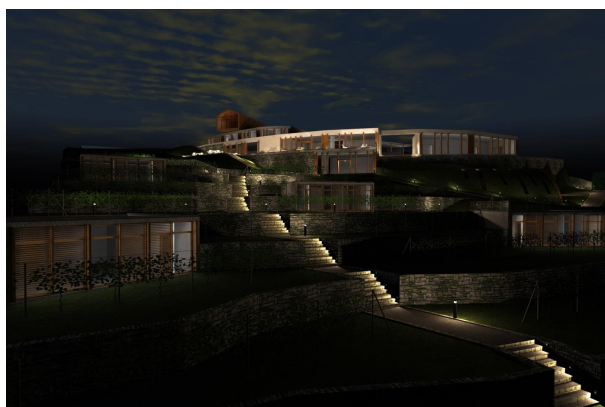
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технология виноделия,
ферментация вин,
старение вин,
выращивание винограда.

АННОТАЦИЯ



В статье представлен студенческий проект, разработанный на Архитектурном факультете Университета Черногории. Заданная тема для проектирования – семейный комплекс по производству вина. В проекте разработано объемно - пространственное решение комплекса в тесной взаимосвязи с существующим рельефом местности, для которой проектируется комплекс. Освещены вопросы технологии обработки винограда, производства и хранения вин. Представленное планировочное решение обеспечивает тесную связь производственной зоны и погребов для хранения вин с домом хозяина. Подробно разработан ближайший природный ландшафт, включающий грунтовые террасы для виноградников и домики для проживания наемных рабочих.

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