BASKETBALL
LEBEN e.V.

PLANNING AND CONSTRUCTION PROCESS

OF A MULTIFUNCTIONAL COMMUNITY CENTER IN BÖGÖZ

MULTIFUNCTIONAL COMMUNITY CENTER

Planning and construction process

The community center was planned by the design studio at Augsburg University of Applied Sciences' Faculty of Architecture. As part of an excursion to Romania in October 2016, students designed individual proposals under the supervision of Professor Wolfgang Huß and Christian Schühle during the 2016/2017 winter semester. The most important requirements were an architecture that matched the traditional townscape and could be used flexibly, as well as a high-quality construction from an

ecological perspective that was cost-effective and could be produced with the resources available on site. At the end of the semester, a jury consisting of professors from the university, representatives of Basketball Life and the president of the Romanian basketball club was formed. In a joint final presentation, the jury selected a design with the greatest potential for further development. Six of the students continued to work on this design in the summer semester of 2017 and fleshed out the construction. In addition, students from the Energy Efficiency Design course worked on the energy and building services concept during this phase. The supporting structure was further optimized by civil engineering students.

A soil expert was commissioned on site to carry out a preliminary investigation of the soil and groundwater conditions in order to rule out any problems with the foundations of the hall. Contact has been made with a local architect. A cost calculation based on the design was prepared and a quotation was obtained from a local company to check the cost assumptions. The local school management pointed out that a court size of 40 x 20 m instead of the current 28 x 15 m basketball court would be very advantageous for renting out the hall. The effects of both size variants are therefore currently being examined and compared.

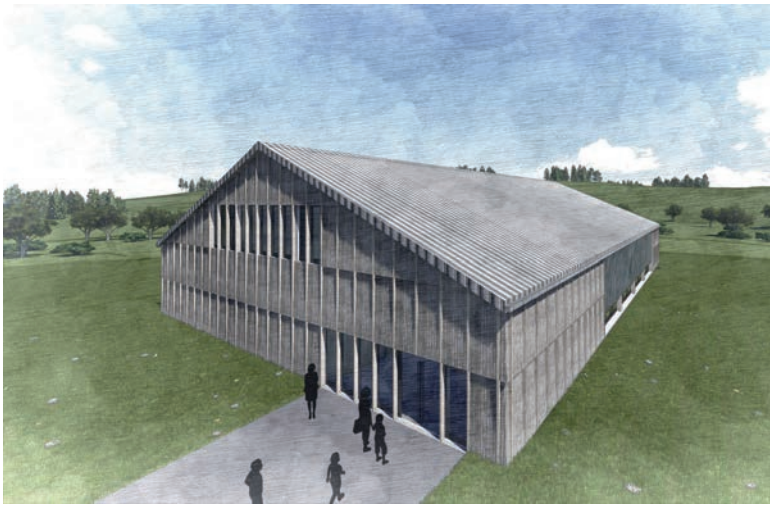
Planned steps:
As soon as the construction project comes into view, more local partners must be involved. A competent architectural firm that is motivated by the project objectives and the necessary specialist planners (especially for structural engineering and building services) should be selected through interviews with the existing project team and representatives of the main sponsors. Since the planning costs are considerably lower than in Germany compared to the execution costs and the competence and commitment of the planners are of great importance for the success of the project, a pure cost comparison is not expedient when selecting the planners. References and personal discussions are at least as important here. In close consultation with the project team, the planners on site will obtain the building permit, draw up the implementation planning and the invitation to tender for the construction work, manage the construction supervision and draw up a maintenance concept. For the detailed specifications are drawn up and at least five comparable tenders are obtained.

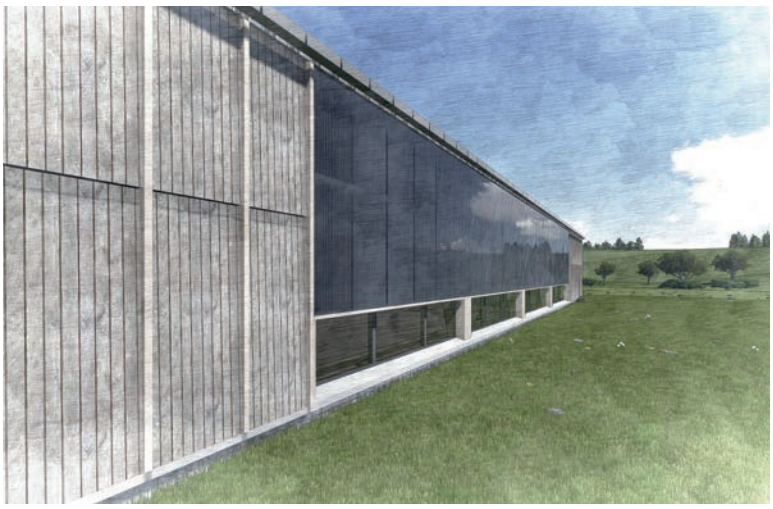
Pictures: Presentation of the designs at the university in Augsburg

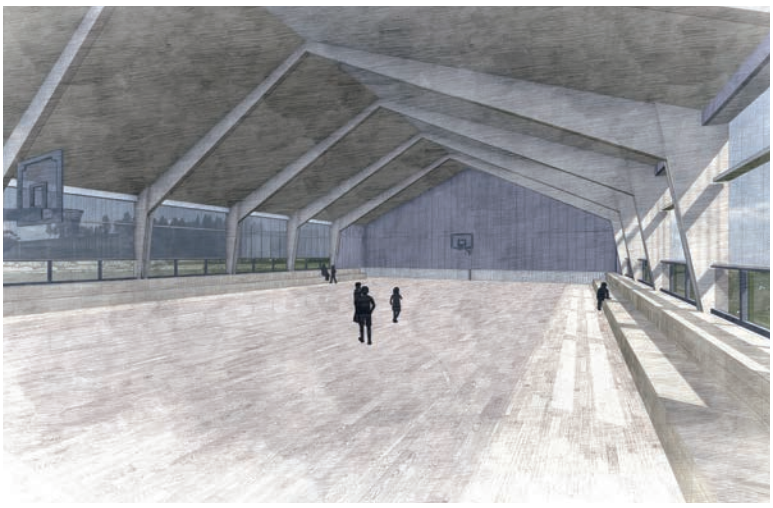
Design of the multifunctional community center

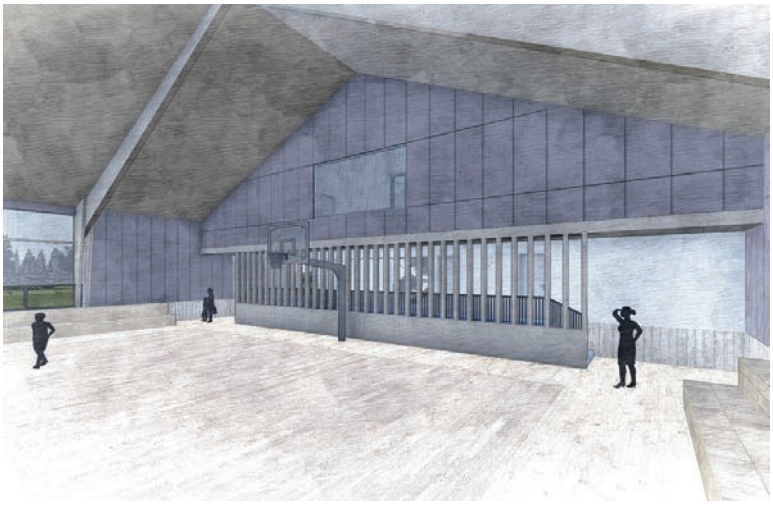
Pictures: Prof. Huß and Christian Schühle with the students in Bögöz

In addition to the main criteria of cost-effectiveness and expertise, the awarding of contracts also places importance on local value creation. This means that companies should be commissioned that are as local as possible and, in addition, building materials that are produced as regionally and sustainably as possible (this applies in particular to the timber) should be used. The planning is designed in such a way that parts of the center (modular elements such as the façade cladding and interior wall cladding, mobile grandstands) can also be easily constructed by unskilled workers themselves. In this way, the local residents should reduce the costs by actively supporting the work and, as a side effect, also become more emotionally involved in the project. A summer workshop of German and ideally also Romanian architecture students, who are involved in the construction phase, is a possible and desirable addition to the team of professional companies and planners.









Design description

A multifunctional community center with a sports hall is a relatively large building in the small-scale village structure of Bögöz, which must be well integrated into the urban planning. It is optimally positioned on the central plot of the school, both functionally and in terms of urban planning: This is because the hall is connected to the larger and publicly used buildings in the village, and school sports can be practiced on the school grounds. The simple and minimalist structure communicates with the barns in the surrounding courtyards in terms of its design language and materials. The traditional pitched roof, taken over from the surrounding buildings, fits in with the townscape and is easy to build. The lowering of the hall floor by four steps below ground level reduces the size of the building visible from the outside, is advantageous in terms of energy and allows an unusual view of the surrounding, very attractive landscape from the playing field and the grandstand: a strip of windows runs at eye level along the lower end of the longitudinal facades. The gable walls remain consistently closed on the inside in favor of an optimal, glare-free view of the basket and goal. A narrow layer of space adjoins the pitch on one gable end and accommodates all the necessary ancillary rooms for the entrance, changing rooms, toilets, showers, equipment and technology.

The design process is very much characterized by the simplest and most cost-effective execution of the hall; we are looking for a simple, functional solution. During the investigations, it became clear what was necessary for the successful operation of the building: the climate with very cold and long winters makes a relatively well-insulated and heatable hall necessary in order to keep the operating costs within limits and to meet a minimum comfort requirement. Simply equipped changing rooms and sanitary facilities are seen as indispensable, particularly because of the ability to rent them out. The strengthening of the village community, a main objective of the project, speaks in favor of a small grandstand: parents and friends should be able to cheer on the players.

The supporting structure of the building is a wooden construction. This is in keeping with the building tradition of the area, as local craftsmen know how to work with this material. From an ecological point of view, wood is a very high-quality building material because it stores CO2 and thus actively counteracts global warming. In addition, a timber construction consumes considerably less primary energy for the construction of the building than a steel or concrete construction, for example. The tender places particular emphasis on tracing the origin and harvesting from sustainably managedforests in the region, as this is not a matter of course in Romania, unlike in Germany.

The main lighting in the building is provided by large, multi-layer polycarbonate multi-skin sheets on the longitudinal facades. This material combines very low manufacturing costs with good thermal insulation and lighting properties. Although the plastic is a petroleum-based product and has a relatively short service life of around 20 years, its use is considered to be expedient from an economic and ecological point of view.

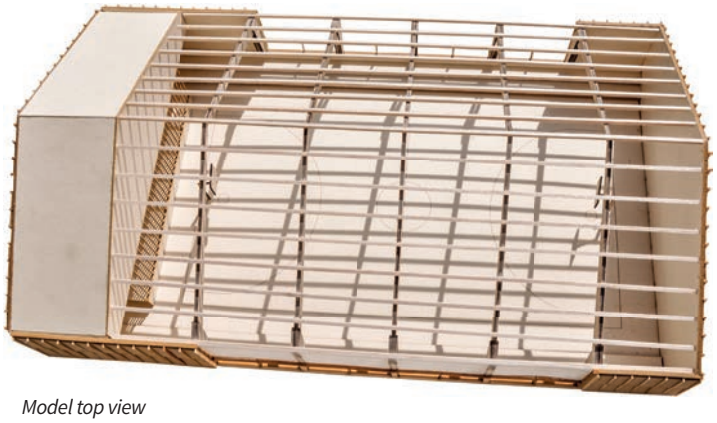
Greater priority is given to winter thermal insulation than comfort in summer, as occupancy is expected to be lower during the school vacation months thanks to the neighboring outdoor space that has already been built. This eliminates the need for costly and high-maintenance sun protection. Temperature control in summer is mainly achieved through intensive ventilation: the supply air is brought in via the low-lying window strips, while ventilation openings in the ridge allow the heated air to escape at the top.

The closed facade areas are clad with wooden facade modules. These modules are of a manageable size and can be constructed by non-professionals using very simple tools. The same applies to the interior wall cladding elements and the grandstand elements. These are multifunctional and can also be used as seating in the hall for village festivals, weddings, etc. The hall floor is designed as a cost-effective, yet comfortable and durable tartan floor.

Model interior view

Model view side with window front

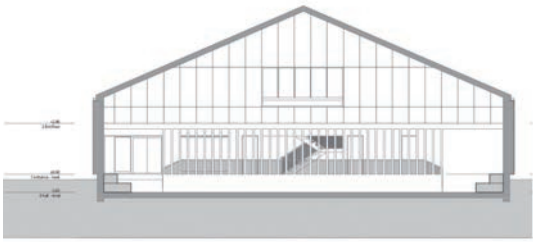
Model View front with entrance



Model top view

Ansichten M 1:100

Schnittperspektive



Ansicht M 1:100

The building site

The multifunctional community center is to be built on the school grounds. The local council in Bögöz has officially commissioned us to initiate fundraising for the building. They are aware of the added value and are fully behind the project. The municipality is providing us with the land for the construction.

Existing school in Bögöz with rear plot for the new building.

Basketball Leben e.V. has purchased the land next to the school in 2021 and will make it available for the construction of the community center. The school's building plot will therefore be enlarged. In this case, the new building can be built lengthwise and the incidence of light can be better utilized.

Source: Google Earth

Calculation

The concept for financing the project is as follows:

The construction of the hall will be financed from donations. The costs for operation, maintenance and upkeep are generated from the building‘s income, mainly through rentals.

A detailed cost estimate was drawn up in advance on the basis of the design plans. This was checked and adjusted on the basis of calculations by Romanian construction companies and planners so that a reliable cost framework could be determined. This includes additional plots of land as well as all approval, planning and execution costs for the entire facility. It can be estimated at € 850,000 including VAT. This corresponds to around 40% of the costs that would be incurred in Germany for the same construction without a plot of land. This is because materials cost a similar amount of money in Romania as in Germany, while labor costs are considerably lower. A soil survey has already been carried out to rule out any cost-relevant surprises that could arise from the subsoil.

The construction of the building has been simplified as far as possible. It is entirely possible to have individual services such as the prefabricated, modular façade elements or the furniture elements that can be used flexibly as stands, bands or hall furniture provided by the villagers themselves. Nonetheless, a fully functional, heatable community center is to be created that will be suitable for all multifunctional uses.

Students survey and inspect the Bögöz school grounds

Cost estimate

Status February 2021

Overview of gross cost groups

100	Property[1)]	10.500,00 €
200	Preparation and development	17.400,00 €
300-390	Building - Building construction	580.000,00 €
400-490	Building - Technical installations	110.200,00 €
500	Outdoor facilities	17.400,00 €
600	Equipment	5.800,00 €
700	Incidental building costs	25.000,00 €
	Cost reserve	87.000,00 €
	Total gross costs	**853.300,00 €**

[1)] Property is provided free of charge

We also have a detailed cost calculation, which we will be happy to send you separately as an Excel file if you are interested.

Cost recovery

Sports hall in Zetelaka

The sports hall in Zetelaka, which was built in 2014, is used as a comparison. Zetelaka has around 5,700 inhabitants and is located approximately 12 km north-east of Odorheiu Secuiesc. The municipality of Bögöz is inhabited by around 3,300 people and is located around 10 km south-west of Odorheiu Secuiesc.

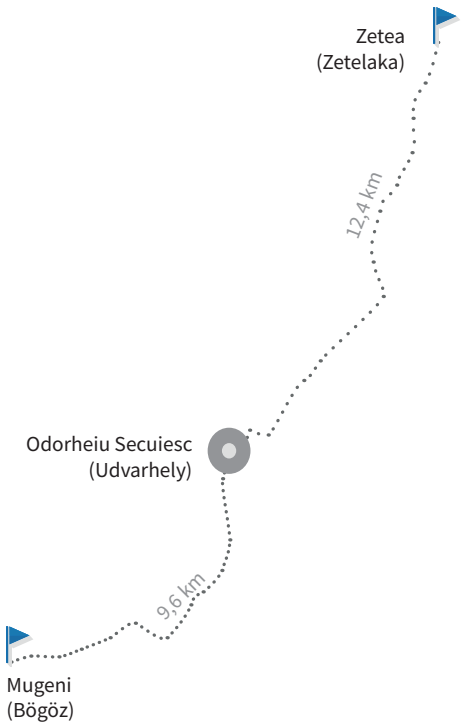
EXPENDITURE

per year	LEI	€
Heating	50.000	10.600
Electricity	7.000 - 8.000	1.480 - 1.700
Maintenance/Repair	10.000	2.120
Administrator	36.000	7.630

Total expenditure 104,000 LEI / 22,045 EUR

REVENUE

Sporthallen in der Stadt, aber auch die Sporthalle in Zetelaka, verlangen für die Nutzung zwischen 100 und 120 RON (ca. 20 -25 €) pro Stunde.



Diese Halle wird an 5 Stunden pro Tag und an 6 Tagen die Woche vermietet. Geht man von 100 RON pro Stunde aus, liegen die Einnahmen pro Jahr alleine durch die Vermietung an Sportgruppen bei:

100 RON x 5 Std. x 6 Tage x 52 Wochen =

156,000 LEI / 32,922.02 EUR

For example, LEI 10,000 (approx. € 2,000) is paid per day for renting the „Rákóczi-Center“ sports hall in Odorheiu Secuiesc for a wedding.

The future sports hall in Bögöz will be used by the school itself in the mornings and some of the afternoons, and the school has agreed to cover part of the maintenance costs.

The costs of LEI 36,000 per year for administration and maintenance will be borne by the municipality.

The hourly rates for rental to the sports groups are borne by the participants of the respective group themselves. This is also the case in Odorheiu Secuiesc.

Stand: 2019

The main responsible party on site will be the municipality and in particular the school. They will employ a janitor whose role will be to look after the maintenance and upkeep of the building.

The operation of the building and the associated running costs will be covered mainly by the rental of the building to sports groups and for events and by the financial contribution of the school and the community.

Further income is generated through the following measures:

1. Hire to companies for corporate events
2. Events for private individuals, e.g. for weddings
3. National and international sports camps and tournaments are intended to raise money.
4. Food/drink sales during the basketball, hand-ball and soccer tournaments
5. Entrance fees for various events such as theater or dance events