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EVALUATION OF TECHNICAL DOCUMENTATION FOR MULTIFUNCTIONAL BUILDING IN BARAGANU VILAGE, BRAILA COUNTY

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Abstract

The beneficiary of the investment has requested evaluation of technical and economic documentation for the multifunctional building construction in Baraganu village, Braila County, assessed in compliance with the technical requirements and standards in force. The construction is thus conceived as to cover minimum capacities and surfaces to create certain adaptable spaces for future intended use. The multifunctional building is constructed to be rented in order to re-establish services that are not provided or are insufficient, for the increase people's standard of living, the social and professional development of the commune, where preferably complementary activities should be conducted, but also the possibility of independent operation taking into consideration the organization criteria on the area of activity.

Key words*: multifunctional building, business premises rental, services, professional and social development*

INTRODUCTION

In terms of administrative matter, Baraganu village is the seat of Baraganu Commune. Baraganu Commune is seated in the South end of Braila County, in Calmatuiului Field, crossed by DN21 (National Road) (E584) which connects Braila to Slobozia.

The location proposed for the multifunctional building is located within the build-up area of the commune, nearby the kindergarten and the church, at the crossroads of Dudesti Street and Doicesti Street at no. 138A. It is a state-owned land with cadastre number 71247. The parcel where the building is to be located has a surface of 1138 m2 and it is classified under the category of use yards-buildings. At current date, there are no other buildings on the land.

Baraganu has a temperate continental climate with large seasonal variations and relatively low rainfall. The dominant winds blow moderate from Northeast. The average annual temperature is +10˚C and the amount of maximum rainfall is 400 mm/year.

Frost depth is 0.9 m (STAS 6054/1985).

In terms of geological matters, Baraganu features deposits belonging to the upper Holocene, made of loess deposits and sand dunes.

The seismic behaviour of the land is characterised by: the designing land acceleration ag=0.25g, corner period Tc=1.00s (P100-1,2013)

MATERIALS AND METHODS

The design of spaces in terms of technical and functional matters, according to the agreement with the beneficiary's point of view, took into account the fact that the Town Hall of Baraganu Commune will receive rental requests related to the building for setting a basic medical care group and therefore spaces appropriate for the public health services and spaces to accommodate medical staff were designed, divided on operational areas, namely (Anghel, 2013)

GROUND FLOOR:

Area 1 - front desk hall and waiting room for patients;

- 3 medical offices with surfaces that can be divided by slight items (plasterboard) thus separating the spaces for medical examinations from the treatment office;

- male/female rest rooms for medical staff, patients and disabled;
Area 2 – pharmacy and storehouses;
Annexes – technical spaces with thermal station;
- stairs leading upstairs

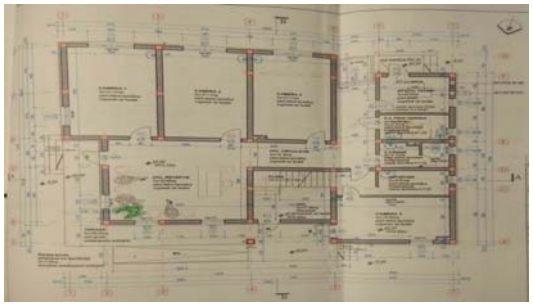

Figure.1. Groundfloor plan view

FIRST FLOOR:
Area 3 - 3 offices to accommodate the medical staff (office with rest rooms); In designing the system for the buildings within this project, we complied with the provisions related to the quality requirements (Law 10, 1995) that lay down the following basic applicable requirements during the whole period of constructions: mechanical resistance and stability; safety to the fire; hygiene, health and environment; safety and accessibility in operation; protection against noise; energy saving and thermal insulation; sustainable use of natural resources.

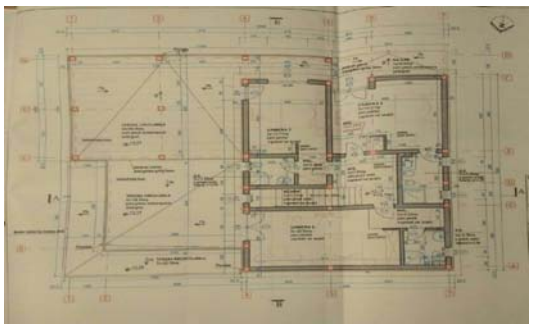

Figure.2 First floor plan view

The building is articulated in a square with maximum size 16.90 x 14.15 m, including the outer thermal insulation with thermal system, thickness 10 cm.
The building area at the level ±0.00 is Ac=204.65 m2 and gross building area Ad=322.60 m2; total useful area Au=273.27 m2, Hmax at the attic=6.50 m compared to the level ±0.00.

Figure. 3 General arrangement

The level ±0.00 compared to which the levels in the project were calculated is the level of the flooring in the ground floor of the building and it is located about 45 cm above the level of the outer land arranged (sidewalk).
A terrace located at the level –0.03 m provides independent accesses in the 3 functional areas. The access to the terrace is done by 2 packs of 3 stairs and a ramp for disabled people located on the Northern and Eastern construction sides.
The free height of the spaces in the ground floor is of 2.90 m, and in the upper floor, it is of 2.60 m.
The 3 accommodation units in the upper floor are each made up of: access hallway, the accommodation room in itself, toilet room, the possibility to use a terrace or a balcony.
The exterior walls, supporting walls, will be made of efficient brick masonry with 25 cm thick vertical holes, and the inner walls of masonry with 25 cm thick solid brick (the supporting ones). The light partition walls will be made of sandwich plasterboard, 10 cm thick, except for the partition wall separating the toilet in the upper floor from the floor hallway which shall be 20 cm thick to include the supporting structure of the ceramic sanitary ware.
The roof will be made as non-walk roof terrace with the following layers from bottom to the top: reinforced concrete slab 13 cm thick; self-levelling screed and shovel M100; PVC TEFOND membrane (diffusion layer and vapours barrier); polystyrene thermal insulation of 20 cm; supporting shovel of Thermo Concrete and backfall of min. 5 cm; cold bituminous primer with Hydrostop; hot working bituminous waterproofing

membrane – 3 layers; layer of white gravel, sort 15-25 mm, 10 cm thick.
Roof accessories will be provided with grey "Lindab" sheet metal gutters and water spouts.
The outer joinery will be made of PVC, walnut wood effect with double glazing.
The inner joinery in the ground floor will be of white PVC, and the upper floor of painted wood.
Finishing in the outer part are: plastering and facade painting, plywood face brick,
tiled outdoor flooring, slip and frost proofed on the terraces and steps.
Exterior finishes will be performed, for the exterior walls of mineral structured silicone plasters, white-limestone of at least 1.5 mm, the putty of at least 5 mm applied over the polystyrene panels, reinforced with fibreglass mesh
Some areas will be coated with face brick. At the base (45 cm height), we will use grey mosaic mineral plaster.
Indoor finishing:
GROUND FLOOR: ordinary plaster and painting with washable paints, epoxy floors and ceramic tiles, epoxy painting at a height of 1.5 m in medical offices and toilets.
UPPER FLOOR: ordinary plaster and painting with washable paints, parquet floors in rooms and ceramic tiles in hallways and bathrooms, earthenware tiles in bathrooms.
The stairs, ramp, parapets of the terraces will be equipped with stainless steel rails.
Insulation: thermal insulation will be provided for the outer walls, base and roof, interior and exterior waterproofing insulation.
The landscaping will include walkways for pedestrians, green spaces, protection sidewalks.
We have designed a vertical systematization with slopes outwards the construction allowing fast evacuation of rainwater.
The building will be equipped with interior and exterior plumbing, heating
and electrical connected installations, connected to the external networks installed in the area.
Water supply will be assured from existing common distribution pipe on Doicesti Street through its own branching made of a pipe and water tank with cold-watermeter.
Wastewater will be evacuated by means of gravitation through a connection to the drainable septic tank nearby, within the roadways.
The spaces will be heated by they own thermal plant solid fuel (wood) and heating devices using water as thermal agent. The thermal plan will be located in a specially arranged technical space with direct access from the outside and will have useful power P = 40 kW.
Gas will be discharged through flue – stainless steel flexible hose and a stainless-steel sheet flue insulated with mineral wool protected on the outside part with sheets of stainless steel.
The authorization of construction works (Law No. 50/1991) updated on October 5, 2012, the building falls into the next category and class of importance: category of importance C-normal (HGR 766, 1997); class of importance IV (P100, 2013); second degree fire resistance (P118, 1999).

RESULTS AND DISCUSSIONS

In designing the constructive system for multifunctional building there were respected the provisions of design regulations in force, regarding general concept of the resistance structure and constructive composition in detail. Necessary measures have been taken, by specific calculation, so loads likely to act on the building during construction and exploitation do not produce: partial or total collapse of the building; unacceptable deformations of structural elements; damage to other parts of building, plumbing, heating, electrical as a result of the large deformations of the load-bearing; damage to the building in relation to seismic risk.

CONCLUSIONS

Current statistics show that 9,632,500 inhabitants (44.80% of population) lives in rural areas (INS, 2007)
The basic staring point that prevention in the health sector is the cheapest and most effective method on population health maintaining. The main factor in disease prevention is health education and permanent supervision of people’s health. In order to do this, the family doctor must be perfectly integrated in its

professional environment and patients should have easy access to the physician.

By setting up healthcare groups in rural areas, it could be created all conditions required to implement national preventive healthcare programs quickly and accurately.

Clearly, the costs would be quickly recovered in savings resulted if the expenses are lowered in the medical system by improving population's health and reducing the number of illnesses. There are also results that cannot be quantified in terms of financial matters, but with major implications in increasing the quality of life, increasing life expectancy of the population, etc. The project can be doubled by a national housing project for general practitioners who intend to settle and conduct their activities in rural areas.

The importance of establishing a medical outpatient care facility in Baraganu Commune is imperative for all inhabitants, as in the nearby area there are no other medical facilities that can provide medical care.

ACKNOWLEDGEMENTS

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SECTION 03
WATER RESOURCES MANAGEMENT