A PROPOSED TURKISH-HUNGARIAN 100-BED GENERAL HOSPITAL, ABUJA, NIGERIA

In cooperation of Central European Healthcare Alliance (Hungary) and the Turkish Government

2019

PROFESSIONAL MEDICAL CARE PROGRAM

PLANNING

The aim is to design a state-of-art general but multi-specialist hospital for commercial operation in Turkish-Hungarian cooperation. This hospital provides small emergency department, one-day service, containing ward units with total bed strength of 100 as well as to insure a comprehensive outpatient care with the most up-to-date level and if needed, expand it with subspecialty's development and expansion directions as nephrology, oncology, heart-surgery, different transplantations (first kidney transplantation), haemodialysis etc.

MAIN FUNCTIONAL UNITS

1. WARD DEPARTMENTS

Surgical Matrix Ward – TOTAL 40 beds (incl. 5 beds postoperative ICU)

Orthopaedic – Traumatology Ward
General Surgery Ward
Head-Neck Surgery & Ophthalmologic Surgery Ward
ENT ward
Urology Ward

Internal Medicine Matrix Ward – TOTAL 50 beds

Oncology
Nephrology
Cardiology
Angiology
Gastroenterology
Neurology
Dermatology
Gynaecology and Obstetrics Ward
Paediatrics
Isolated Infectious Ward

Emergency Unit – TOTAL 10 beds

Incl. burn injuries supply, toxicology treatment, emergency OP theatre, emergency X-ray unit

2. OUTPATIENT DEPARTMENT

General internal medicine
Cardiology
General surgery
Traumatology
Orthopaedics
Vascular surgery
Neurosurgery
Obstetrics + Gynaecology
ENT + Audiometry
Neurology
Nephrology
Urology

Rheumatology
Oncology
Psychiatry
Ophthalmology
Dentistry, Stomatoplasty
Dermatology
Paediatrics

3. CENTRAL OPERATING THEATRE BLOCK

2 theatres for major operations
2 theatres for minor surgical interventions
Postoperative ICU with 10 beds for observation

4. CENTRAL RADIOLOGY

Ultrasound Examination Room – 2 pcs
Radiographic Examination Room
Radiographic and Fluoroscopic Examination Room
Computer Tomography Room
Magnetic Resonance Imaging Room
Dental X-Ray
PET – CT unit

5. ENDOSCOPY

Gastroscopy
Colonoscopy
Cystoscopy

6. CENTRAL CHEMICAL LABORATORY (with microbiology and bacteriology)

7. CSSD (Central Sterile Services Department)

8. CENTRAL PHARMACY (for internal and external supply and cytostatic drugs)

9. BLOOD BANK

10. KITCHEN (with staff dining)**, LAUNDRY, CENTRAL STORES**

11. CENTRAL STAFF CHANGING ROOMS

12. MAINTENANCE

13. OFFICES (Management and back offices; Accounting, Informatics System, Controlling)

14. MEDICAL GAS SUPPLY (Oxygen, Compressed air, Vacuum, Nitrogen)

15. POWER GENERATOR

16. WATER TREATMENT PLANT

17. WASTE MANAGEMENT

CONCEPT OF DESIGN

The base of the concept to achieve the task mentioned in the previously presented point is that the building site of the proposed hospital is plain and not inbuilt; furthermore the regulations of implementation of health care facilities are not occurred so far, therefore the constructing regulations are unknown in that place.

The principle of the layout was to ensure the most effective connections of the different functional units considering the medical requirements.

Basically the patients can arrive in two different ways. The patients with advanced reservation enter the building in the windbreak of the main entrance room and after registration go to the different diagnostic and treatment facilities.

The previously not reserved patients requiring emergency treatments arrive directly to the emergency admission point by ambulance or private car, and after laboratory and medical imaging examinations get to the first floor by elevators where they can be treated either in the operating theatre block or in the intensive care unit or in the maternity ward.

The outpatient rehabilitation clinics as well as the rehabilitation wards are located on the ground floor with close reach to the physiotherapy treatment block in the same level.

The medical and the surgical wards are placed above the emergency admission and diagnostic block, into one of the four different wings of the first floor, opening from the central passage area - in the neighbourhood of the operating theatres, the ICU, the gynaecology and maternity wards.

The CSSD gets place in the second floor just over the operating theatre block, the ICU and the Caesarean section theatre, where the sterile supply most frequently needed.

The central staff changing, the staff dining unit and the administration – lecture group of rooms are placed in the second floor.

The serving and supplying departments namely the kitchen, laundry and the central stores are placed with separate approach in the ground floor at the east and west side facade of the building.

BUILDING FORMATION, ARCHITECTURAL APPEARANCE AND STRUCTURES

In the course of forming the proposed hospital we strived to design a relatively low building with just a few levels but greatly planted with trees fitting to the green environment.

The wards are placed in the transverse building wings; the rehabilitation department is in the ground floor while all other inpatient wards are located in the first floor.

The architectural appearance is pleasant with long lasting and high-level coverage materials ensuring elegant look of the building. The outside walls are covered with polished limestone tiles, the frame of the windows are made of marinated wood; the sidewalls of balconies are made of glued safety glasses.

Monolith reinforced concrete pillar frame structure is planned with multi-supported concrete ceiling structure stiffed with sufficient concrete walls being strong enough to resist the wind pressure and the possible seismic forces. The ceiling structures are plane booth upwards and downwards to ensure the easy installation of the machinery and engineering supplies.

The surface of the floor as well as the roofing and the front facades are properly heat insulated. The roof above the first floor is covered with soil to allow growing green vegetation with proper insulation against water and heat.

FIRE PROTECTION

The function of the building: health care institute.

Levels: multi-storeyed not medium heighted building (the height of the uppermost level is less than +13.65 m compared to the +/- 0.00m level of the main entrance)

Fire hazard classification: moderately fire-hazardous. The fire protection should be solved according to the local standards and regulations.

The building is divided to different fire protective zones; the area of each zone is less than 4000 m².

The accidental evacuation can be carried out properly throughout the smoke-free staircases, where pressurized ventilation system is implemented. Protected spaces are planned in every floor within every functional unit for the disabled patients.

THE MAIN DATA OF THE PLANNED BUILDING

The proposed building is multi-storeyed with ground floor, partly constructed basement, first-, second and third floor.

The built-up area of the site:	**13 767 m²**

The net area of the different levels

Basement	6 309.84
Ground floor	11 203.12
First Floor	10 764.64
Second Floor	4 266.47
Third Floor	547.46
Total net area:	**33 091.53 m²**

The gross area of the different levels (m²):

Basement	6 570.71
Ground floor	12 849.91
First Floor	12 376.06
Second Floor	4 789.57
Third Floor	385.71
Total gross area:	**36 972.96 m²**

Building height: (elevation area / elevation length)

The total elevation area of the building (m^2):	8 163.64
The total elevation length of the building (m):	902.21
Calculated building height:	**9.05 m**

The total volume of the building (m^3)

Basement	23 654.56
Ground floor	53 969.62
First Floor	51 979.45
Second Floor	20 116.19
Third Floor	1 292.13
Total gross volume	**151 012 m^3**

Parking place requirement calculation

a. Inpatients – (1 place for every 5 beds)

   87/5 = 17, 4 pcs. > Corrected value: 18 pcs.

b. Outpatients – (10 m^2 of the net area of the main premises)

   877.16 m^2 /10 = 87.72 pcs. > Corrected value: 88 pcs.

Total parking place requirement:	**106 pcs**

FINANCIAL INFORMATION

Estimated budget for the **turnkey project** incl. design, construction, furnishing, medical equipment: **66,000,000 EUR**.

BUDGET BREAKDOWN

ITEM	DESCRIPTION	AMOUNT (EUR)
1. Complete planning; concept plan, visual plans, architectural and execution plans		5 200 000
2. Construction work - civil work, facility supervision system with elevators, air condition system, generators, water treatment plant	935 EUR/m2, est. ~40,000 m2	37 400 000
3. Medical + back service technology, furnished		
3.1. Digital imaging system	MRI, CT, DSA, X-Ray, Ultrasound, Spect camera, PACS	3 800 000
3.2. Automated Central Chemical Laboratory		1 500 000
3.3. Pathology + histology		850 000
3.4. Operating theatres + therapy		4 900 000
3.5. Dialysis centre with two stations		650 000
3.6. Instruments for rehabilitation and physiotherapy		800 000
3.7. CSSD (Hygiene and Sterilization)		1 500 000
3.8. Central Pharmacy for internal and external supply		1 300 000
3.9. Kitchen, Laundry, Central Stores		2 450 000
3.10. Furnishing		2 000 000
4. HMIS Hospital Management Informatics System		350 000
5. Project management	5% of the total work	3 300 000
TOTAL COST		**66 000 000**

This budget does NOT include the cost of financing and the acquisition of land.

PARTNERSHIP STRUCTURE

The Project shall be carried out in form of PPP where The Federal Government of Nigeria (NIG) provides the land for the hospital, takes care of all clearance and licences for establishing and operation; the Hungarian Party (HUN) prepares the designs and supplies the hospital furniture and all medical equipment; Turkish Party (TR) does the construction work. There shall be an SPV formed as follows:

- 10% - NIG
- 45% - TR
- 45% - HUN

HUN and TR will ensure the smooth and feasible operation as well as the international standard; they will set up the medical staff and take care of the medical training of the Nigerian medical personnel.

FINANCING

- 15% - from Maarif Foundation / Turkish Government
- 85% - Hungarian EXIMBANK

Abuja, 5th February 2020

Judit BERES, Economic Counsellor
Embassy of Hungary, Abuja / Nigeria

and

Istvan HEVES, Cluster Manager
Biomedical Engineer
CEHA Central European Healthcare Alliance