

Terms of Reference (TOR)

Construction Consultancy Services

Establishment of Bangamata National Cellular and Molecular Research Centre

Room no: 309, BMRC Bhaban, Mohakhali, Dhaka-1212.



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Introduction

Medical research is very essential to guide improvements in health systems and developing new initiatives. Bangladesh has achieved remarkable progress in health gains but still confronted with huge disease burden. Medical research is particularly important to consider evidence-based care practices and health care service provisions as well as ensuring quality medical care. Investment has significantly increased in infrastructure for health system but there exist gaps in evidence to guide reduction of important endemic and emerging new health problems. In this context, the progressive government under the very able leadership of honorable Prime minister Sheikh Hasina has planned to establish an international standard research centre to promote cellular and molecular technology in the country. This centre, Bangamata National Cellular and Molecular Research Centre (BNCMRC) will be managed and run by the Bangladesh Medical Research Council (BMRC) to ensure effective qualitative health services for all people of the country. With the target to complete the construction work of this Centre by June 2023, work has already been started and the project is in the process of selecting a Construction Consultant.

Context

Medical research is very essential to guide improvements in health systems and develop new initiatives. Although during the recent years Bangladesh has achieved remarkable progress in achieving most of the health MDGs including a reduced child and maternal mortalities, increase in life expectancy due to the reduction in communicable disease incidence etc., there still exists huge disease burden. In this context, medical research is particularly important to consider evidence-based care practices and health care service provisions as well as ensuring quality medical care for the population. Although investment has significantly increased in infrastructure for the health system, gaps remain in evidence to guide the reduction of important endemic and emerging new health problems.

Perspectives of Cellular and Molecular levels of most communicable and non- communicable diseases largely depend upon region based genetic pattern thus development of personalized drug therapy is arranged through analysis of genetic pattern of each disease in order to ensure highest level of treatment. In this regard Bangladesh still is lagging far behind in the region based genetic pattern analysis and personalized drug therapy.



In the above context the progressive government under the very able leadership of honorable Prime minister Sheikh Hasina has planned to establish a full-fledged research Centre of international standard to promote cellular and Molecular technology in the country. This Centre, Bangamata National Cellular and Molecular Research Centre (BNCMRC) will be managed and run by the Bangladesh Medical Research Centre (BMRC) to ensure effective qualitative health services for all people of the country. It will help reaching the advancement in health services at the door step of people through training, creating research scopes and applying the impact derived from the research.

Bangladesh Medical Research Council (BMRC):

Established in 1972 the Bangladesh Medical Research Council (BMRC) is the focal point for health research in the country. It is an autonomous body under the Ministry of Health and Family Welfare (MOH&FW) which aims to create effective and quality health care facilities for the whole population of the country by promoting health research through the strengthening of research facilities, training and dissemination of research results. The main activities of the council include organization and promotion of scientific research in various fields of Health Science, training of manpower in the field of health research and dissemination of research results for proper utilization.

Bangamata National Cellular and Molecular Research Centre (BNCMRC):

The “Bangamata National Cellular and Molecular Research Centre –BNCMRC” under the Ministry of Health and Family Welfare (MOHFW) has a five-year establishment plan; Nov 2018 to June 2023. The construction work of BNCMRC will be adjacent to the the BMRC main campus at Mohakhali, Dhaka. With the general objective to contribute for the Development of the national health systems by introducing International standard modern biotechnology to facilitate national health services and medical research, the BNCMRC has the following specific objectives.

- Establishment of a common platform (network) for national and international researchers and scientists to create new researchers and arrangement of trainings for them.
- Development of National Medical Research that will reach to international level in diagnosis of diseases and which will contribute to national health strategy as well as help to reduce the national health services cost-effectively and accurately.
- Determining of communicable and non- communicable disease pattern and related research.
- Laboratory services to the people of the country to identify the disease as well as record keeping and preservation of patient’s information, sample, data, and research work.
- Facilitate to use modern biotechnology for the development of pharmaceuticals and food industries.
- Establishment of an international standard research laboratory with all modern facilities along with all other supportive units, facilities as well as whenever anything necessary.



BNCMRC will have the following different Divisions and Units:

Divisions name	Description
Medical Biotechnology	This department will conduct research to develop human resource by utilizing modern technology. The main objective of this dept. is to conduct research to discover easy way of both infectious and non-infectious diseases diagnosis, prevention and treatment. Also, morphological changes that occur in cell due to different diseases and its possible preventive measures
Cell Biology	This department will conduct research at the molecular level of cause and treatment of different cancer diseases, possible changes of cell function, pattern, growth and cell death, cell signalling and designing of new drug for therapy.
Molecular Biology and Genetics	This department will conduct research on the molecular and genetic profile behind disease progression and development of therapeutic option for the cure and prevention of different types of molecular and genetic disorders
Biochemistry	Will conduct research in physiology, pathology, diseases due to mal nutrition, and endocrinology. Possible biochemical changes at the cell level of human body due to diseases can be another research objective.
Immunology	Will conduct research in human body defence mechanism. The main research objective is to strength human defence mechanism by discovering vaccine of different infectious and non- infectious diseases.
Virology	Will conduct research in rapid viral diagnosis testing based on Immunological and nucleic acid identification system.
Microbiology	Will conduct research on pattern and pathogenesis prevention of infectious diseases due to microorganism like bacteria, virus and other parasites.
Pathology	Will conduct diagnostic test of blood, urine, stool and various organic chemicals at a reasonable cost. To discover new diagnostic tools and techniques specially cancer and hematological disorder.
Nutrition, Food science and technology	Will conduct research in food quality, nutritional facts in food, food production and processing, identification of microorganism present in food, purity of food and level of vitamin and mineral present in the food. Try to discover easy way to ensure purity of food products. In addition, this dept will discover a new balance food mix for the poor people of Bangladesh at a very reasonable cost.
Pharmacology and Pharmacogenomics	Combining Pharmacological and Genomics research to find how the drug response influences human genome. Therapeutic effects and side effects of various drugs will be evaluated.
Public Health and Epidemiology	Will conduct research on ethnic variation of disease pattern, causes of disease and health problems due to disease. Epidemiological research includes Etiology, Transmission, forensic epidemiology, biomonitoring, influence of clinical treatment. This dept. will utilize information technology to ascertain disease pattern and maintain different diseases data base.
Radiology	Will conduct research in different diseases related information, advancement of treatment and types of treatment. Major functional responsibilities of this dept. are Nuclear cardiology, Radiopharmaceutical discovery, breast imaging, MRI etc. This dept. Can play a vital role in the diagnosis and prevention of diseases for the people of Bangladesh through clinical trial.



Besides the 12 departments, there are some other supporting units as described below:

Research Units:

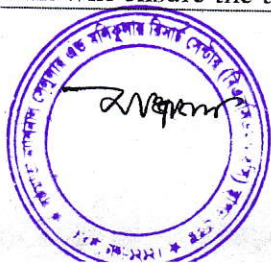
Name of the Units	Description
Core facility Unit	This Unit will function as core unit by providing all the modern facility that will need to carry out research work.
Cell and Tissue culture unit	This unit mainly work for various types of cells collection and preservation. This unit will maintain biosafety level 2 and 3 to carry out cell biology, microbiology, virology, pharmacology research. This department will perform cell culture to research on cell-cell communication in diseased condition and also on cell's reaction when a newly invented drug applied into it. Drug quality can be tested through this department by injecting it on growing cells or preparing cell lines.
Clinical trial Unit	For Clinical trial of newly invented drug's bioavailability, sensitivity and side-effect.
Animal Resource Unit	An animal resource unit will establish to research on various types of animals. In addition, this unit will provide all the facility and required condition that will need to nourish these animals for research purpose .
Tissue Banking and Sample preservation Unit	Now a days modern world collecting and preserving biological samples or stem cells to use them for treatment of complex diseases. This unit will use to collect and preserve this biological samples and stem cells. Here stem cell will be collected from interested donor and preserved for further necessary treatment.
Proteomics, genomics, & bioinformatics Unit	This Unit will help to analysis research result. In addition, it will also help to develop database and hypothesis.
Histopathology and Hematology Unit	This unit will involve with cancer diagnosis and also with other blood disease diagnosis. In addition this unit will carry out research work by involving with pathology or other departments.
Translational or regenerative Unit	This is a developing technology of modern treatment which can improve the diseased condition by using cell consume technology.

Special unit:

Diagnostic Laboratory services	This unit mainly uses to diagnose complex diseases by using modern diagnostic technology. General People of our country can use the facility of modern diagnostic technology at minimum cost.
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General Units:

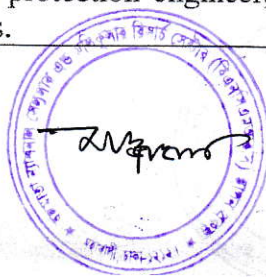
Name of the Unit	Description
Central Data Banking and Archives	This unit will archive all the research data and information of the researchers and every types of biological sample of the country in database which will significantly help in research, prognosis and treatment of diseases. Apart from this, results from patient's specimen and every research finding will be archived here. This unit will be considered as a very important unit and it will ensure maximum security on data banking and archiving.
Nitrogen Plant	Nitrogen is required for storage of tissue and cellular specimen. Nitrogen plant will ensure the availability of nitrogen supply for different laboratory.



Civil, Mechanical and Electrical (CME) Unit	This unit will be responsible for implementation, alteration, augmentation of the whole laboratory design and related every control, planning and flaw amendment. To maintain maximum efficiency of the equipment related to research activities, this unit will manage 24x7 uninterrupted power supply. Quality of laboratory environment and materials will be maintained through central ventilation and air conditioning system. To avoid accidental fire, this unit will ensure fire safety and fire defense through identification and placement of flammable materials..
Biomedical Engineering Unit	This unit will be responsible for maintenance of equipment and materials used in different department and research units.
Central Supply and Store	Raw materials and related items will be stored as a warehouse in this unit and will be supplied from here depending on the necessity of different departments at different time.
Water Treatment Plant	Used water in laboratory and other sectors will be purified, sterilized and will be ready to reuse in drinking and research activities under this unit.
Waste Management	Waste materials from laboratory will be sterilized and dispatch will be managed from this department.
Knowledge Management Unit (Library)	A modern library with every up-to-date-facility will be setup in BMRC. National and international different books, referral books and different journals will be available here. At the same time, an e-library will also be established here.
Management Unit	<p>A) Human Resource This department will play role in fulfilling the intention of BMRC by recruiting qualified manpower and training up related employees.</p> <p>B) Finance and Budget Unit This unit will maintain every financial audit, activities related to purchase, account keeping and financial administration.</p> <p>C) Security This unit will ensure every type of security of the whole institute including laboratory.</p> <p>D) Convention Center Overall take care and maintenance of multipurpose auditorium related to laboratories will be under this unit. Also, multimedia presentation and related matters will also be controlled from this unit.</p> <p>E) Biosafety and Biosecurity Unit Observation of every research activity according to biosafety guideline and necessary advise will be given from this unit.</p>

Other Units:

Name of the Unit	Description
Communication and Promotional Unit	Publicity and marketing of this center and communication and relation buildup with different national and international researchers and research organization will be maintained from this unit.
Modern Firefighting System	All components of modern fire-protection systems need to work together to effectively detect, contain, control, and/or extinguish a fire in its early stages - and to survive during the fire. To achieve the most beneficial symbiosis between these components, It will involve an experienced system designer, such as a fire-protection engineer, in the early stages of the planning and design process.

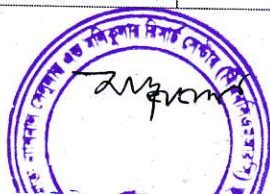


Modern Parking System	Modern parking system will allow accommodation for all vehicles in an organized way. Parking area will be set at the basement of research building and convention center and other place according to the plan
Dormitory facilities	Four star standard dormitory facilities will be built at the convention center and dormitory building with accommodation facilities for international scientist equipped with seminar rooms, swimming pool etc.
Kitchen Building	A standard kitchen facilities will be built in a separate 2 storied building

SCOPE OF SERVICES:

Design, construction and management of the following works:

SL NO	Building name	Description
1	Research building (16-storied building of 20-storied foundation with 2 basements)	This will be the main building for all the departments and research unit
2	Convention center and dormitory building (10-storied building of 10-storied foundation with 2 basements)	A large auditorium with 1000 people accommodation facility will be built
3	Substation, generator plant and emergency staffdormitory building (5-storied building with 5-storied foundation)	This building will be built for setting up Generator plant and substation. Moreover, a staff dormitory facility will be built on the upper floor to be used in an emergency case
4	Liquid nitrogen plant (5-storied building with 5-storied foundation)	This building will be built for manufacturing liquid nitrogen to fulfil the internal need for liquid nitrogen supply
5	Outdoor kitchen (2-storeid building with 5- storeid foundation)	The outdoor kitchen will be built to establish a standard kitchen facilites to fulfil the requirements of food for all staffs of BNCMRC
6	Animal research facilities (5-storied building with 5-storied foundation)	Animal species are used in every stage of the research and development effort-from discovery to development and safety testing to clinical trials. The animal research facility will be a specially designed building type, which accommodates exquisitely controlled environments for the care and maintenance of experimental animals
7	Designing of modern laboratory waste management plant (2-storied building with 5-storied foundation)	This building will be built for the management and establishment of waste disposal plant for proper disposal of hazardous and non-hazardous laboratory wastes
8	Link corridor	Four link corridor will be built connecting BMRC building with research building of BNCMRC



9	Boundary wall of BNCMRC	A boundary wall will be constructed surrounding the BNCMRC complex
10	Internal and external RCC Road	For the movement of people, light to heavy vehicles throughout the BNCMRC complex
11	Modern sewerage system	A modern sewerage system will be established which encompasses components such as receiving drains, manholes, pumping stations, storm overflows, and screening chambers of the combined sewer or sanitary sewer
12	Land clearing and landscaping	The land located on the east side of the BMRC bhaban has been allocated for the establishment of BNCMRC. The land need to be made suitable for the initiation of construction
13	Deep tube well and external water supply	Deep tube well will be established to fulfill the continuous water supply of BNCMRC
14	Arboriculture	For beautification of BNCMRC premises
15	Internal and External Electrification	Including all the buildings, sub-station, Lift, AC, Generator, HVAC system, Pump etc.
16	Modern firefighting system	This system is to establish all components of the modern fire-protection systems to work together to effectively detect, control, and/or extinguish a fire in its early stages - and to survive rescue during the occurrence of fire
17	Water treatment plant	A separate plant will be developed to decontaminate waste water obtained from laboratory and other wastages

The Scope of Work to be undertaken under this Terms of Reference for Engineering, Architectural and Project Management Consultant Services includes the following:

- ✓ Conducting detailed digital land survey and mapping of the site
- ✓ Conducting soil test (geotechnical profile) for structural foundation design
- ✓ Providing architectural design based on specific guidelines by BNCMRC and incorporating requisite laboratory facilities as well as provisions
- ✓ Providing structural design in compliance with GoB & international standard
- ✓ Providing plumbing design in compliance with GoB & international standard
- ✓ Providing mechanical design in compliance with GoB & international standard
- ✓ Providing electrical design in compliance with GoB & international standard



- ✓ Providing a detailed Bill of Quantity (BOQ) with materials specifications and standards ensuring the requisite standard is maintained
- ✓ Ensuring all technical inputs and cost estimates related to the construction components are accurate, timely provided and included in the project proposals and budgets
- ✓ Support the Supply / Procurement in all tender exercises for the procurement of construction services and materials
- ✓ Identifying and managing risks and initiate corrective action where necessary, so that maximum benefit to client and stakeholders are achieved
- ✓ Prequalification of contractors and/or analysis of bids received
- ✓ Responsible for ensuring that effective implementation, monitoring and supervision tools are developed and implemented
- ✓ Responsible to ensure effective quality assurance systems are in place and contractor and vendors work in compliance with technical specifications and BNCMRC quality standards
- ✓ Preparing inception report, interim report, final project and handover reports and maintain the relevant project records
- ✓ Construction Supervision, Contract Management and Administration
- ✓ Project Management Support
- ✓ Prepare draft specification of related items to be procured (standardisation of specification)
- ✓ Prepare Tender/ Bid Document (Tender Schedule) as per PPR 2008 & updated version
- ✓ Assist in improving the Tender Procedures and implementation policies
- ✓ Prepare Detail Procurement Plan of Action
- ✓ Prepare Contract Agreements for Suppliers as per PPR 2008 & PPA 2006& updated version
- ✓ Assist in preparing the Comparative Statements for Bidding Process (Procurement)
- ✓ Assist in preparing the RDPPs as and when required
- ✓ Assist in completion of the Project Completion Report (PCR)
- ✓ Liaison with international organizations for the accreditation of the Centre.
- ✓ Formation of SOP's whatever necessary
- ✓ Assist to complete audit yearly and at the end of the project or whenever it necessary
- ✓ Assist and co-ordinate equipment consultancy services whenever necessary
- ✓ Taking legal action in case of any kind of remissness
- ✓ Assist in establishing a modern firefighting system
- ✓ Assist in establishing the green building concept

The Consulting firm will function as the Engineering body and requires to report to Project Director (PD) of BNCMRC. The Consultant will administer the civil works and related all types of engineering works contracts and ensure that the project works are constructed in accordance with the provision of



the contracts. The Consultant will be required to nominate a team of engineers representative who will be full-time resident in the project area.

MINIMAL QUALIFICATION & STAFFING REQUIREMENTS:

A team of qualified and licensed consultants will be needed for the implementation of the project. It is expected that the Consultants will propose their required person months to carry out the task as per TOR. The Consultant is encouraged to use the expertise available in Bangladesh and from abroad whenever necessary. However, the Consultant is free to propose a staffing plan and skill necessary to meet the objectives and scope of the services.

The Consultant will have at least the following categories professionals in the expert pool :

PROFESSIONALS REQUIRED FOR THE EVALUATION WORKS			
No.	Type of Professionals	Educational Qualification	Experience Required
Design Phase			
01	Principal Architect	B.Arch. in architecture	At least 15 years of relevant experience
02	Sr. Architect	B.Arch. in architecture	At least 5 years of relevant experience
03	Civil / Design Engineer	B.Sc. in Civil Engineering	At least 10 years of relevant experience
04	Lead MEP Engineer	B.Sc. in Mechanical Engineering	At least 5 years of relevant experience (includes training and work experiences in MEP engineering)
05	Electrical Engineer	B.Sc. in Electrical Engineering	At least 5 years of relevant experience
05	Draftsman	Diploma in Civil Engineering	At least 6 years of relevant experience
Tendering Phase			
01	Principal Architect	B.Arch. in architecture	At least 15 years of relevant experience
02	Design Engineer	B.Sc. in Civil Engineering	At least 10 years of relevant experience
03	Electrical Engineer	B.Sc. in Electrical Engineering	At least 5 years of relevant experience
Construction Supervision Phase			
01	Quality Assurance Engineer	B.Sc. in Civil Engineering	At least 6 years of relevant experience

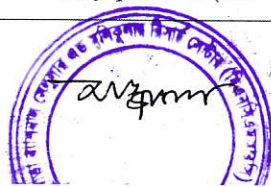


02	Office Engineer (Civil)	B.Sc. in Civil Engineering	At least 4 years of relevant experience
03	Office Engineer (Electrical)	B.Sc. in Electrical Engineering	At least 4 years of relevant experience

- Apart from the above mentioned professional panel, the consultant will be able to hire other technical experts (national and international) as per need to proper executing of the project

Minimal qualifications of the firms :

MINIMUM ELIGIBILITY FOR BIDDERS	
Nature of Business	Engineering and Project Management consultancy firms
Years of Experience	Minimum ten (10) years of design experience
Milestone Completion	<ol style="list-style-type: none"> a. Private Limited Company with 10 years of experience. b. Minimum 10 years experience in consultancy services in categories <ol style="list-style-type: none"> 1. Successful completion of at least five 12-storied buildings 2. Experiences in Medical and Health Care building Design. 3. Experiences in Sustainable Building (LEED Certified) 4. Experience in designing at least 55,000 sqm area in a single building structure will add advantage 5. Experience in designing Institutional/Research building
Value of Individual Milestone	Minimum of 30 million BDT under a single contract
Annual Turnover (Last three years)	Minimum yearly average turnover of 10 million BDT from consultancy business in the last three years
Nature of Work Experience	Under Government / Semi-Government / Private / Bank / Insurance / Corporate House / NGO
Minimum documentary evidences	Track records of the last five years in building design and documentary evidences of the eligibility of the participating bidders
Special Instruction	The bidders who have records of litigation and delaying the works are strongly discouraged to apply for the Expression of Interest
Duration of the Assignment	Duration of the contract would be until project completion + defects liability period (according to govt. Rule)



The Consultant Firm would be selected according to the Quality and Cost Based Selection (QCBS) criteria under the BMRC Guidelines for selection of Consulting Firm.

SUBMISSION OF EXPRESSION OF INTEREST (EOI):

The EOI shall contain the following documents:

- ✓ Organization profile with relevant experiences
- ✓ Copy of trade license and firm registration
- ✓ CVs and related documents of key technical experts (signed by the organization)
- ✓ Relevant Project Data Sheets (PDS)
- ✓ Copy of Tax certificate and VAT registration
- ✓ Any other relevant documents
- ✓ Update copy of income tax return

For detailed Terms of Reference (TOR) please visit the website: www.bmrcbd.org or it can be collected from BNCMRC Project Office. It is encouraged to submit the TOR with the EOI.

EOI should be submitted in a sealed envelope with one original + one copy mentioned on the top of the envelope on or before 09/06/2019 12:30 PM (Bangladesh Local Time). Please enclose the proposal in an envelope, do seal and mark it with "EOI for the Construction Consultancy Services for Bangamata National Cellular and Molecular Research Center" and send to: Project Director, Establishment of Bangamata National Cellular and Molecular Research Center, Room #309, 3rd Floor, BMRC Bhaban, Mohakhali, Dhaka – 1212. Hard Copy with proper Seal and signature are encouraged.

