SCHOOL EDUCATION & LITERACY DEPARTMENT (SELD)
GOVERNMENT OF SINDH

REFORM SUPPORT UNIT (RSU)
PROJECT MANAGEMENT AND IMPLEMENTATION UNIT (PMIU)

Sindh Early Learning Enhancement through Classroom Transformation (SELECT)

Hiring of Need Assessment, Detailed Architectural / Engineering Design and Supervision Consulting Firm (DSC)

1.BACKGROUND OF ASSIGNMENT

Through the Sindh Early Learning Enhancement through Classroom Transformation (SELECT) Project, and with the financial assistance of The World Bank and the Government of Sindh (GoS), the School Education and Literacy Department (SELD) aimsunder Component 2, "**Developing an effective learning environment",**to improve the overall school infrastructure of primary and elementary schools for a better classroom environment, along with ensuring the provision of all basic and essential water, sanitation, and health (WASH) and teaching and learning facilities in all project schools.

The Project Management and Implementation Unit (PMIU) of the Reform Support Unit (RSU) (here and after referred to as the Client) of SELECT intends to apply part of the project funds to hire the services of a qualified Engineering, Design, Construction Supervision and Quality Assurance Consulting Firm (here and after referred to as the Consulting Firm).

The services of a Design, Architecture, Engineering and Construction Supervision Consultancy Firm are required to verify through a detailed technical assessment all the pre-identified school sites once finalized by the RSU/PMIU management. Based on field visits and engineering assessment, the Consulting Firm will need to design each school based on the physical and non-physical requirements, prepare the required tender documents, packages, and environmental management support to RSU/PMIU for the project. Later at Execution Phase,the ConsultingFirm will be required to perform the constructionsupervision of project sites.

The main aim of this component is to establish educationalenvironments conducive to teaching and learning, that maximize the available academic/instructional space. The improved teaching and learning spaces will aim to attract more students to come to school and increase the quality of learning time that they spend at school. The improved teaching and learning environment is especially important for girls' enrollment for two reasons: (a) WASH facilities have been demonstrated to be critical for girl's attendance and retention; and (b) availability of elementary grades in the same community is important for girls for social and security reasons, and it also helps to prevent their dropout in early grades.

School upgradation of 600 primary schools (grade 1–5) to elementary schools (grade 1–8) in selected districts is an essential part of the holistic upgradation of learning environments in Sindh province.

Upgrading to elementary schools will enable: (a) increased retention rates from grades 5 to 6:and (b) increased retention rates in lower grades by demonstrating the potential for future study opportunities.

Activities will include construction of completely new schools where the infrastructure is not available or already deteriorated with time;school rehabilitation through refurbishing of existing classrooms and adding new classrooms to existing schools; provision of furniture; and provision of adequate WASH facilities, all while actively using eco-friendly, local materials and designs. Learner-friendly designs will be pursued, as well as the use of basic and advanced features from an agreed Climate Response Indicator (CRI)described in more detailin section 2 of this TOR, andbriefly summarized here: (a) design elements which utilize naturally regulated lighting and temperature control for improving learning conditions in the classroom; (b) use of color schemes and materials to increase visual stimulation for learning; and (c) flexible physical layouts and classroom furnishings for a variety of learning styles. Upgrades will also include the provision of new learning spaces such as minilibraries that will entice and motivate students and teachers toward improved literacy. Where possible, the project will also utilize cost-effective, carbon-efficient technology for climate risk mitigations, such as solar panels to generate electricity in schools, water harvesting and recycling systems, and heat-resistant buildings, and will ensure the rehabilitation activities are easy to maintain at low cost. In the flood-prone areas, an 'elevated school' design will be utilized where appropriate to increase disaster resilience against anticipated and regularly occurring flood risks. Provision of age-appropriate and child-friendly and facilities for co- and extra-curricular activities are also supported, hence shall be procured for each school.

1. List of Pre-Selected Target Districts and the Region

Hyderabad	Larkana	Mirpur Khas	Shaheed Benazirabad	Sukkur
● Tando Muhammad Khan ● Badin ● Sujawal ● Thatta ● Matiari	● Kashmore ● Jacobabad ● Shikarpur ● Kambar-shahdadkot	● Mirpur Khas	● Sanghar	● Ghotki

Component 2 of the SELECT Project: Developing an Effective Learning Environment

The component aims to improve the physical learning environment in selected primary to upgraded elementary schools and to support the improved teaching and learning aims set out in Component 1(Transforming Teaching Practices in the Early Grades) and Component 3 (Improving System Capacity for Effective School Leadership and Management Support). The importance of the physical learning space in schools and classrooms is receiving renewed attention for effective delivery of more active pedagogies and curriculum which are necessary to develop students' capacities for the 21"century. The main aim of this component is to establish learning environments conducive to learning that maximize available academic/instructional space and create synergy with the pedagogical approaches proposed in Component 1, and the student dropout mitigation activities in Component 3.

Under Component2—**Developing an effective learning environment—**covers three types of construction/rehabilitation activities on existing school compounds, as follows:

A – Upgradation of primary to Elementary 350 schools with completely new infrastructure

Under this component 350 primary schools are to be upgraded to elementary schools through the construction of new classrooms, ECE rooms, required labs (Computer or any other), Resource Center, Multipurpose Hall, play areas (as per need) and all missing facilities on cluster approach in the selected districts of the province.The Secretary of SELD notified the School Upgradation and Cluster Policies that provide guidance on governance within each cluster - a group of public schools in a contiguous geographical area that forms the catchment area for the elementary/secondary school, where the elementary school acts as the cluster hub, and the middle and primary schools act as the satellites functioning under the cluster hub.

B – Upgradation of 200 primary to elementary schools with addition of new classrooms (expansion block) and rehabilitation of the existing classrooms and infrastructure

Under this component 200 primary schools to be upgraded to elementary schools through rehabilitation of existing classrooms and infrastructure, construction of additional classrooms, ECE rooms, Science & IT Laboratories, Multipurpose Hall, play areas (as per need) and provision of all missing facilities on cluster approach in the selected districts of Sindh.

C – Upgradation of 50 Primary Schools to highschools providing completely new infrastructure

Under this component 50 Primary/elementary schools to be upgraded to Secondary schools (up to Grade 10)through the construction of new infrastructure (classrooms, Early Childhood Education (ECE) rooms, Science & Information Technology (IT)/ Laboratories,Resource Center, Multipurpose Hall, play areas (as per need) and all missing facilities on cluster approach.

Objectives:

The overreaching objective of the project is to the improve the quality of education services in selected districts of Sindh. The Project Management and Implementation Unit/ Reform Support Unit (PMIU/RSU) of the School Education and Literacy Department (SELD) requires the professional services of a qualified Engineering Consulting Firm for the need assessment, designing, supervision, environmental and social management and quality assurance for the construction and rehabilitation of education facilities. It should be noted that, given the high visibility of this project, The Clientexpects highly dedicated Consulting Firms, having vast experience, knowledge, and skills to carry out this assignment.

Part A: Scope of Work

The work includes engineering, design, supervision, environmental and social management and quality assurance for construction and rehabilitation of public schools. PMIU/RSU requires the services of two firms to provide the said services—region-wise details are provided in the table given below.

Consultancy Services	**Number of Firms**	**Services of Firms in Regions/Districts**	**Scope of Services/ Number of Schools**
Needsassessment (including feasibility study), Detailed Architectural &structuralDesign, Engineering Estimates (Design Calculations), site specific Environmental and Social (E&S) instrumentsPreparation along with E&S Screening of subproject sites and regular E&S reporting to PMIU/RSU Taluka/Town Wise Packages & Tender/Bidding Documents & Construction Supervision and Quality Assurance	Firm 01	Region (Hyderabad) includes: 1. District Tando Muhammad Khan 2. Badin 3. Sujawal 4. Thatta 5. Matiari Region (Mirpur Khas) 6. District Mirpur Khas	A – Upgradation of primary to Elementary 166* schools with completely new infrastructure B – Upgradation of 92primary to elementary schools with addition of new classrooms (expansion block) and rehabilitation of the existing classrooms and infrastructure C – Upgradation of 25 Primary Schools to high schools providing completely new infrastructure
	Firm 02	Region (Larkana) 1. District Kashmore 2. Jacobabad 3. Shikarpur 4. Kambar-shahdadkot Region (Sukkur) 5. District Ghotki Region III (Benazirabad) 6. District Sanghar	A – Upgradation of primary to Elementary 184schools with completely new infrastructure B – Upgradation of 108primary to elementary schools with addition of new classrooms (expansion block) and rehabilitation of the existing classrooms and infrastructure C – Upgradation of 25 Primary Schools to high schools providing completely new

			infrastructure

* [Internal Bank team note: These final numbers will be determined afterthe baseline survey is completed, and geographical coverage will affect the number of schools in each district. For now, we can go ahead with these numbers.]

The Consulting Firm services will be time-based with strict compliances for quality, reporting and completion of the activities defined below:

Part B: Geographical Coverage

The scope of services will be divided in two geographic packages and separate contracts shall be signed for each of the respective package.

Firm 1:
Region (Hyderabad) includes –

1. District Tando Muhammad Khan
2. Badin
3. Sujawal
4. Thatta
5. Matiari

Region (Mirpur Khas)

6. District Mirpur Khas

Firm 2:
Region (Larkana)

1. District Kashmore
2. Jacobabad
3. Shikarpur
4. Kambar-shahdadkot

Region (Sukkur)

5. District Ghotki

Region III (Benazirabad)

6. District Sanghar

Part C: Following are the specific responsibilities and acquired tasks of the Consulting Firm
This section describes the primary objectives of the Consulting Firm as they relate to the project described above and the responsibilities under this TOR.

2.0 DETAILED TERM OF REFERENCE

The assignment consists of the below two major phases:

A. Design Phase

2.1 Under the**design phase** the major objective of this assignment is to ensure:

(i) the cost efficient and timely completion of the detailed need Assessment, architectural and engineering designs complete in all respect and as per best engineering practices and approved standards and building codes in preselected 600 school blocks, from which ultimately 600 schools will be selected in 3 categories

A. Up-Gradation of primary to Elementary 350 Schools,

B-Rehabilitation Reconstruction Extension 200,

C-upgradation of primary to secondary 50 school class in existing primary

Note: Categories (A, B & C) are with indicative numbers, the requirement among the 600 selected schools will only be finalized after a comprehensive need assessment exercise. The need assessment exercise will further define the category of school. The schools will be distributed among the two firms according to geographical distribution.

(ii) The consultants are required to prepare Modular Designs by engaging Renowned Architects to prepare first the Model Designs for Coastal and Non-Coastal Districts for Hot and Dry and Hot and Humid Climate or any other category proposed by the Consultants. The 12 Districts selected under this project have different climatic and geographical locations, hence different Modular Designs shall be prepared by the consultants which are relevant for the different geographic locations and different climatic conditions. A minimum of at least three types of Modular Designs must be prepared by each of the two engagedconsulting firms to cover the entire 12 Districts (each firm will have responsibility for 06 Districts). The proposed list of modular designs shall be briefed in the Technical Proposal. The Modular Designs will be presented in shape of Architectural Views along with 3D Modelling to the client.

(iii) Based on the approval from the RSUof the Modular Designs submitted by the Consultants, school specific designs will be prepared providing in all respect all architectural, structural, electrical, plumbing, drainage designs and all other components of the school blocks that shall include but not limited to need Assessment , general and site specific layout, construction drawings (2D and 3D rendered) and working drawings, Engineer's Estimates and price adjustment weightages, bill of quantities (BOQs) and technical specifications, special provisions, together with the environmental plan(environmental & Social assessment , preparation of environmental management plan etc.) to prioritize the tendering packages based on geographic proximity of sites/locations for effective project management. Furniture Layouts and quantities will be provided separately as the bidding of Furniture will be performed separately by the Client. The Consultant shall also provide the procurement support to the Client in convening the procurement process, preparing bidding packages, technical support to the scope and project specifications in accordance with the applicable procurement regulations.

(iv) The Consultants are required to conduct site-specific E&S Screening and accordingly prepare Region/ District Wise/ School Category Wise Environmental and Social Management Plans (ESMP) on the basis of Environmental and Social Management Framework (available at the website of RSU) and the World Bank Environmental and Social Standards of overall Environmental and Social Framework policy.During the Planning and

Design stage the compliance of ESMP, Gender Action Plan and Labor Management Procedures, Community Health & Safety, Stakeholder Engagement and Grievance Redressal parameters and the Environmental, Health and SafetyGuidelines (EHSGs, with general and industry-specific examples of Good International Industry Practice, GIIP) requirements will be considered.

(V) The following Climate Response Indicator parameters shall be utilizedduring the Architecture and Engineering Design of the Proposed School Buildings

CRI(Climate Response Indicator)Features

The six "basic" CRI parameters—which will apply to all 600 schools—are:

(i) building orientation for natural/"passive" heating and lighting;
(ii) thickness of walls;
(iii) minimum height of classrooms;
(iv) wind catchers—where applicable;
(v) position, size, and number of windows; and
(vi) greenery and plantation of trees.

The two "advanced" CRI parameters—which will apply to 4 schools per district (48 total)—are:

(i) use of special rooftop and ceiling materials for heat reflection/capture; and
(ii) selection and use of environment-friendly/energy efficient building materials.

B. Supervision Phase

2.2. In respect of **supervision phase**, the firm will provide detailed and rigorous resident construction supervision and is expected to:

(i) Ensure that high quality construction is achieved within stipulated contractual time and within the allocated budget.
(ii) Ensure that all the Works are carried out in full compliance with the approved architectural and engineering designs, drawings, technical specifications, agreed work schedule, quality and within the terms and conditions of the contract(s) and approved engineering practices.
(iii) Ensure that the contract is effectively and diligently administered from the Client's/Employer's perspective and shall provide all necessary support during the construction supervision to avoid any cost and time claims and shall also provide support to the Employer in managing the dispute and adjudication process during the currency of the contract.
(iv) Ensure that all works are carried out incompliance of site-specific E&S instruments including Environmental Social Management Plans (ESMP), Gender Action Plan (GAP), Labor Management Procedures(LMP), Community Health & Safety Plan, Stakeholder Engagement and Grievance Redressal Mechanism during the construction activities/implementation phase.
(v) Ensure full compliance with relevant national/provincial rules, laws and regulations.

3.0 SCOPE OF SERVICES- DESIGN STAGE FOR DEVELOPING AN EFFECTIVE ENVIRONMENT UNDER THE SINDH EARLY LEARNING ENHANCEMENT THROUGH CLASSROOM TRANSFORMATION (SELECT) PROJECT

The total length of the project is 5 years includingmodular design, needs assessment (NA), feasibility studies (FS), detailed site-specific design (DD),and construction supervision phase. The modular and detailed design of 600 schoolswill be further split into±300 schools to each firmand shall be completed according to the following schedule, and concurrently package-wise procurement shall be initiated to start the execution at sites. The Consultants shall submit a comprehensive Work plan covering the need assessment and design aspect in line with the schedule below. The civil works procurement activity will be performed by the PMIU/RSU, however technical assistance from the Consultants on the procurement of civil works activities are required. Prior to initiation of procurement, the relevant site-specific E&S instruments will be prepared, approved by the World Bank and publicly disclosed in accordance with World Bank ESF policy.

The work plan proposed by each firm must ensure that the following milestones are achieved (activities can be completed before but not later than these due dates):

Project Design Phase – 300 Schools (12 Months)
Construction Supervision and Contract Management – (36 Months) with concurrent construction activities in various Districts based on the work plan of Consultants and Tendering Process. The Consultants will be engaged for 36 months for construction supervision, but after the work award of various packages in any 01 Districts the construction of all schools in any 01 Districts shall be completed in 18 months of time. The tendering process and award of work for every District would be concurrently performed hence the work of few Districts will be initiated in the first 18 months of construction supervision and the few Districts works will be initiated in the 2nd 18 months of construction supervision which will make a total time of construction supervision for 36 Months.

Table 1: Design Phase Activities

Component /Activities – Design Phase	QTR 3 (Jan to March, 2023)	QTR 4 (April to June, 2023)	Year 2 QTR 1 (July 2023 to Sep 2024)	Year 2 QTR 2 (Oct to Dec, 2024)
Technical Need Assessment of first 25 Schools				
School Modular Designs				
Environmental & Social Management Plans				
Site Specific Designs, Engineering Estimates & Bidding Documents of first 25 Schools				
Tendering and Award of Work to Contractors of first 25 Schools				
Construction Supervision of first 25 Schools				
Technical Need Assessment of first 275 Schools (Concurrent Activity)				
Site Specific Designs, Engineering Estimates & Bidding Documents of first 275 Schools – procurement will be performed in packages time to time				
Tendering and Award of Work to Contractors				

of first 275 Schools – various work packages will be awarded time to time				

Note: The above table illustrates the sequence and timelines of the activities by Client, however consultants are allowed to provide comments and suggest the best possible work plan. The construction activities will be initiated once packages tendered and work awarded to the contractors District Wise.

3.1 Planning Stage - Perform School Based Need AssessmentExercise.

i. Conduct the coordination meeting with Client and work out the methodology to perform the Need Assessment of schoolsselected by the RSU, as per the qualification criteria acceptable to the client and the World Bank, including, i.e., flood prone and landslide screening, unavailability of sufficient land, sea intrusion, school located below the mega power lines.

ii. During the need assessment exercise, the consultant shall intimate to client at early stage about the non-viability (low lying area, land unsuitable for investment, school in brackish water zone, no wastewater disposal option, unavailability of school owned land, or any other environmental, social and technical reason) to drop the school at early stage before entering into further design work. For E&S Screening, the guidance provided in SELECTESMF,specifically Chapters 6 and 7, along with the E&S Screening Template as Annexure-II, will be utilized.

iii. The consultant shall also intimate to client at early stage in case the plot size having no future expansion possibility and not feasible for investment. However, in such cases, the consultant shall point other means i.e., vertical extension etc. to bring the plot into the scope of the project. Consultant in such cases may visit nearby school in close coordination with RSU to develop an opportunity to develop Government nearby school to serve the same purpose.

iv. In case the school is in a hazard prone area, it shouldbe replaced with a school from the replacements listin areas without any natural calamity or disaster risks. It is the responsibility of consultant to check the technical/financial viability of the identified/proposed location in such cases. The technical strengthening required to specific school to curb any such unavoidablehazard shall be proposed by the consultants.

v. The school, after the preliminary screening as highlighted above only viable/feasible schools will further be planned and designed. The client will pay the consultancy fee for only viable schools according to the districts provided to each firm.

vi. In cases where replacement schools are deemed necessary as a result of the needs assessments, the content, but not number, of the list of the schools can be altered at any time based on requirements by the client, in consultation with World Bank. Any changes to the list of schools will be formally communicated by PMIU/RSU, with provision of a complete assessment report with geo-tagged photos and uploading of the same documents and photos to a relevant website and mobile application.

vii. Conduct feasibility study of education facilities. The feasibility study will include soil bearing capacity test reports wherever required based on design needs, water quality test reports wherever the source of water is available, proposed design options for new construction of upgraded schools, any salient feature effecting the school development. Soil and water quality tests reports performed by various stakeholders including the consultants on similar assignments can be used, however, for some locations the Consulting Firm may be required to conduct tests based on the requirements of the project. The same data will be utilized prior or during the civil work. Provide a feasibility report after assessment of the projects and upload in the education profile

viii. Provide energy efficiency analysis plan for each education facility. Consider sustainability factors in design such as solar designs and loads requirements and accordingly design the electrifications of the facilities (as per the need).

ix. The output of the need assessment exercise shall produce at least (existing plan, verification of students enrollment, utility assessment, any additional resource required to bring in utilities (water source outside need additional piping, required new electricity connection / challan fee for water and electric connection, connection of waste water disposal at some distance – shall all be highlighted and to connect with utilities all cost shall be assessed and placed in the engineering estimates), structure assessment (categories to be demolished/minor rehabilitation/major rehabilitation /complete new structure etc.), and recommendations for demolition of existing structures to be taken into account by the contractor. The consultants shall propose demolition on the basis of visual inspection / assessment and conformity test for structure stability will be performed through contractor.

3.2 School Modular Architecture Designs

Prepare conceptual modular architecture designs for various Regions/Districts depending on the geographical, environmental, and social assessment). Conceptual modular architecture plans along with 3-D models, using Building InformationModeling wherepossible, and share with PMIU/RSU for approval and take it to further to the site-specific designs.

The consultants are required to prepare a minimum of at least three Modular Designs by engaging Renowned Architects to prepare first the Design Model for Coastal and Non-Coastal Region/ Districts and for Hot and Dry and Hot and Humid Climate Region/Districts or any other category proposed by the Consultants. The 12 Districts selected under this project are with different climatic and geographical locations, the firm shall prepare modular designs according to their regions, different Modular Designs shall be prepared by the consultants to cover the geographic locations and different climatic conditions. The number of Modular Designs to be prepared by the consultants to cover the entire districts given to the firms shall be briefed in the Technical Proposal. The Modular Designs will be presented in shape of Architectural Views along with 3D Modelling to the client after the award of work.

1. The Modular Design shall cover all the parameters of Environmental and Social Management Plan (ESMP), Gender Action Plan (GAP), Community Health & Safety Plan and the following
2. Climate Response Indicator features include:

a. Orientation of the building, for natural/ “passive” heating and cooling.
b. Thickness of walls.
c. Minimum height of classrooms.
d. Windcatchers, where applicable.
e. Position, size, and number of windows to allow better natural lighting and heating/cooling.
f. Greenery and plantation trees, etc.).

Comprehensive CRI Features:

- Use of special rooftop/ceiling materials to allow for heat reflection/capture.
- The selection and use of environment-friendly/energy efficient building materials in the upgradation/constructions.

3.3 School Specific Design (Architectural, Structural, MEP) support.

i. After approval of the Modular proposed designs prepared by the Consultants school specific designs will be prepared by the consultants,evaluate the guidelines/procedures (if any) for selection of existing school site, and architectural and structural design criteria in use in each district, with reference to structural safety standards and identify safety risks involved in view of natural calamities; Structure and construction material of the schools will be designed based on the environmental conditions and to provide green infrastructure for better internal class room environment.

Provide GoS endorsed sub-project designs (considering seismic and climate zones) documents, technical specifications, and architectural drawings

ii. The school site specific designson the basis of approved Modular Design include (detailed architectural, structural, mechanical electrical and plumbing (MEP) design, external development, water supply, treatability required for drinking water, wastewater disposal with cost estimates), design school building on preliminary soil assessment based on the technical experience and put the responsibility on contractors for conformity test.

iii. For rehabilitation works, the facilities like, additional classrooms; missing / lacking facilities like water filtration facility, toilets, boundary wall, other infrastructure and utilities and renovation of existing buildings will be considered.

iv. The designs prepared shall be cost effective and shall meet structural safety standards for minimizing natural disasters risks (seismic, floods, heavy rains/winds, water logging and salinity, etc.).

v. The consultant will develop indigenous designs using local available construction materials in efficient manner and meet the design standards

vi. School wise Environmental and Social Requirements, Occupational Health and Safety, Community Health & Safety, Special Environmental and social safety site specific requirements, ESCPs, implementation of Environmental and Social Management Plans shall be made part of the special condition of the contract and where required part of Bill of Quantities to implement ESMP in true spirit. The BOQ may also include the plantation of local trees at each school. Estimates for bringing in new connections for electricity, water and any other external work to provide all basic utilities.

vii. Provide cost estimates, Bill of Quantities (BOQs) as per current market rateand schedule of work. Prepare draft bidding documents based on finalized packaging in consultation with Client, submit reviewed and verified bidding documents for each school and provide support to Client during bid evaluations and preparation of evaluation reports. Provide support in overall bidding process, evaluation process and contract awards, evaluation, and procurement of civil, electrical, and mechanical works as co-opted technical member.

viii. Prepare Taluka/District wise packages or as deemed suitable, prepare estimates, measurement sheets, Bill of Quantities of the schools in Taluka and prepare the Taluka/ District wise packages accordingly.

3.4Preparation of TALUKA/DISTRICT WISE PACKAGES/Tender Package, Standard Bidding Documents.

The consultant is required to:

i. Prepare REGION/DISTRICT/ TALUKA/TOWN WISE PACKAGES/Tender Packages. All site-specific school design will be completed within the first 12 months, andtendering of packages by both of the firms will be completed according to the following indicative schedule: 25 schools each tendered within the first six months, another 75 schools each within 12 months, and another ±200 each withing 18 months of the contract signing.

ii. Prepare the Procurement Plan for each Region/District/Taluka for the engagement of contracts. The contractors will be hired through RSU/PMIU and the consultant will provide all possible support to RSU/PMIU to prepare necessary documents like engineering estimates, Bill of Quantities, Measurement Sheets etc. for each TALUKA/TOWN WISE PACKAGES/Tender Package, ESMPs, Standard Bidding Document and handover the same to PMIU to initiate procurement process.

iii. Develop Taluka/District based tender documents including estimates, Bill of Quantities, detailed drawings, specifications,and condition of contracts based on World Bank Procurement regulations

3.5 Environmental Management Services to the Client

The consultant needs to hire necessary expert staff for the Preparation of the District Wise or School Category (A, B&C) wise Environmental and Social Management Plans taking the policy from Environmental and Social Framework (ESMF).
Note: (ESMF document available at RSU Website).

The Environmental and Social Management Plans will outline the environmental and social risks, impacts, their mitigation and the budget costing along with implementation arrangements required for implementation, monitoring and reporting. The Environmental Engineer will assist the Design, Tender/Bidding documents to comply with the implementation targets set in the ESMF/ESMP documents.

In addition to the site-specific E&S instruments,the following key works shall be developed:

- Site specific Design Water facilities (Collection of water sample through contractors and analysis at the selected/agreed laboratory). During the need assessment if it is highlighted that clean water is not available, make sure that contractor made provision for the use of appropriate quality of water during the construction and curing of the school structure during construction.
- Ensure the provision of toilets along with the proper disposal system in each school is compulsory (site specific disposal options must be provided, appropriate disposal system shall be provided may be with septic tank and connect to Municipal Sewage system, in case no disposal option of septic tank with soak pit or other may be evaluated depending upon site specific conditions such as soil type, depth of water table, proximity to surface water bodies etc.)
- In case any additional resource required for the provision of utility (like new water connection, electricity connection evaluate the Government challan fee and cost of infrastructure) this cost must be part of the bidding documents. The work will be executed through contractors.
- Architectural design of schools to capture natural lighting and well-ventilated classrooms
- Architectural design of schools to ensure accessibility for disabled individuals
- Architectural design of schools to ensure fire safety and escape methods are in place
- Site specific adaptation of alternate source of power supply to off-grid schools
- Other scope which helps to implement the ESMP.

3.6 Standardization of School Furniture Procurement

i. The shortage of furniture in schools is a perennial problem of education sector. The available data shows that tables, chairs, student desks, shelves, computer tables, cupboards and other allied items are missing in most of the schools. On the other side, considerable expenses incurred at the revenue side of the budget to procure furniture.

ii. The procurement practices, anecdotal evidence suggest, do not streamlined and little oversight and standardization exist in this area. Sindh is a large province with desert, hilly and fertile lands. Some areas have water seepage problems, and some have termite

problems. The standardization endeavor must take into account these divergences. However, the need for standardization and oversight of furniture and other revenue component exists.

iii. In view of the above it is suggested that a thorough study shouldbe carried out to reacha mechanism that standardizes the furniture materials procurement and establishes an oversight regime. Following are the details for such a study:

a. Identify the need of furniture in schools. This task shall be done during the need assessment verification exercise.
b. Review the existing work done by donor agencies, sister provinces and other Government agencies such as ERRA.
c. Draft oversight mechanism for revenue procurement, following World Bank Procurement Regulations.
d. Draft Standards for furniture keeping in view the variations in districts environment and need, school construction standards and best practices.
e. Organize discussion forums to share and seek comments on draft documents.

3.7 Procurement Support to RSU/PMIU – Document Preparation

i. The firm is required to support the RSU during the vetting, the following indicators will be used:

- The Developed Packages shall include:

  a) Construction cost of all identified schools in specific Taluka's including electrical and plumbing works.

  b) Cost of proposed water treatment units and alternate/renewable energy designed units in identified schools, provision of resources for required utilities & ESMP/site-specific E&S instruments implementation

- Separate packages for including the furniture and fixtures to be procured in identified schools.

- Only those schools or facilities are included in the packages which areapproved by the Clientin consultation with the consultantthrough need assessment.

- Quantities of furniture and allied facilities should match with the facilities provided under civil works.

- Items rates are as per the prevailing market rates where applicable.

ii. Once the process of preparation of packages is completed and their subsequent administrative approval from the Competent Authority being taken.

iii. The tender and procurement documents include:

- Conditions of contract (Fixed)

- Bidding data
- Drawings &specifications
- Bill of quantities
- ESMP and any other site-specific E&S instruments/details
- Any other document forming part of the World Bank's standard procurement documents to be used on the project under the Procurement Regulations.

The consultants will also ensure that high quality standards are identified and maintained. The first step would be to ensure that good quality material preferably from quality assured vendors is procured.

4.0 DETAILED SCOPE OF SERVICES REQUIRED FROM THE CONSULTANT AT SUPERVISION

The Consultant is required to:

i. Provide detail construction supervision as per approved drawings and specifications and as per the plan (including Gantt chart) for each school in respective district, the consultant firm will perform the role of The Engineer's and provide all required services accordingly.

ii. Consultant would ensure that standard procedures of quality of construction (which includes testing of materials brough to the site, environmental and social parameters as identified in the instrumentsand worksexecuted by theContractors at defined stages, vigorously perform field inspections and take timely actions as needed as per the site conditions) are met.

iii. Through contractors the consultants shall perform the structure stability test (strength of building) for dangerous building and low strength building and to prepare a report for client before startingdemolition or refurbishment. Demolition material disposal mechanism shall be adopted according to the applicable government procedures and ESMP beside the provisions required under the ESF by the World Bank.

iv. Provide' Construction Supervision Protocol' (involving SOPs for implementation which may include service standards for decisions/responses from client, contractor and consultant, construction quality and Environmental and Social Management Plans (ESMP) check list, invoice pattern/ procedure etc.)

v. All logistics support to the Project Manager, Project Coordinator, Environmental & Social Specialist, HSE Engineers, Resident Engineer (RE), AREs & Site Inspectors shall be provided by the consulting firm to ensureregular supervisionon site (s) under construction at District/Taluka Level.

vi. The firm will but not limited to perform the following tasks:

a. Certify that the construction work and the material brought at site by the contractor for use is in accordance with the approved specifications and is being tested as per standard practices.

b. Monitor systematically the progress of work according to the construction methodology and schedule of work as per contract agreement, certifying allocation of resources by the contractor, suggesting any changes and recommendations to improve such practices at site and to avoid any delay in progress as forecast; consultancy firm will also provide to client the weekly, fortnightly, monthly, quarterly, and yearly physical progress along with sketches/pictures update in all respects.

c. The consulting firm shall ensure that all the construction of individual contracts and overall administration and monitoring of the progress is done through a computer based automated construction supervision software such as primavera 6.0 above or MS project or any other equivalent software. The Consultant shall ensure that progress and delay analysis against each contract is monitored through the said computer-based software by both the Consultant team as well as by the Contractor.

d. The consultancy firm will need to ensure that all necessary and required tests will be performed by the contractor and consultant will ascertain all test reports as per the quality standards for construction work. Conformity bore holes for soil bearing capacity and water quality test shall be ensured by consultant through the contractors.

e. Provide construction supervision (through qualified and well experienced civil engineers and supervisors/inspectors) for all the civil, electrical, and plumbing works and water and sewerage pipelines in school buildings in the selected 06 districts for each firm in Sindh and certify the work for payment in conformance to approved drawings and specifications at different work stages and deliverables as per the requirement to ensure the quality. The team of professionals required by the client for execution of required construction supervision services in all districts of Sindh.

f. The firm will perform effective contract management in coordination with Clientso that the timelines are met by the Contractor for respective construction contracts.

g. Consultant will upgrade the drawing design according to any field requirement during the implementation phase if such a requirement arises.

h. Consultant will ensure that the relevant license, permits and NOCs, as required by local laws ad regulations, have been obtained by the relevant authorities before proceeding with the execution of works.

i. The consultant shall certify (under firm's seal) running or interim payments of the contractors sent by the RSU/PMIU office (on the basis of work done in compliance with drawings and specifications and other stipulations, considering all required documentations needs as per the conditions of contract)

j. Consultant would be responsible to record, check and verify the measurements of each running bill.

k. Conduct a final inspection of the civil, MEP, CRI works and Revenue Component (bring standards to research for standard development, finalization of standards and procurement plan) delivered at each Region/District/Town/Taluka and certify that the quality of the civil works delivered by contractors in each Taluka meets the prescribed design standards, approved specifications, criteria, and procedure and submit a completion report for each location.

l. Prepare the contract completion report for each of the contract and would finalize the billing against each contract on completion of works.

m. Make recommendations/alternatives corrective measures for removal of construction supervision related problems and execute them in each district to avoid project delays.

n. Recommend any variation necessary to execute the work. The consultant shall ensure that any such changes would be assessed in advance, if possible, to avoid any loss of time and coordinate with PMIU where necessary.

SUPERVISION REPORTING MECHANISM TO CLIENT

a) Provide two inspection reports of each ongoing site per month and upload the reports in the profile, along with the geo-tagged photos taken during construction activities.

b) Carry out inspection of each site during construction, and take geo-tagged photos, at least but not limited to the critical phases of civil works and maintain an online repository of data for all sub-projects /sites.

c) Prepare a tracker and record deviations and rectifications, illustrating with geo-tagged photos for each deviation at each site. During site inspections identify all types of deviations and ensure that the same are certified by the Contractor(s) with strict compliance to approved drawings and specifications. Concerned Site In-charge Resident Engineer / Assistant Resident Engineer (RE/ARE) will be responsible for such rectification and quality assurance.

d) Provide monthly progress report (including charts, graphs, data as required) covering a summary of the overall activities of the project, trends, and analysis, planned vs achieved progress (supported by photographs) and report any issues specific to each sub-project.

e) Provide quarterly and annual reports, indicating the overall achievements, goals, challenges, plus the details in excel format and maps.

vii. Any other allied matter pertaining to supervision would be addressed by the consultant.

4.1 Smooth Supply of School Furniture Procurement

Certify the furniture supply and prepare school wise implementation report.

4.2 Prepare annual operating and maintenance cost

The consultant is required to prepare school specific Annual Operating and Maintenance cost at the end of construction and before hand over the schools. The RSU/PMIU will further in coordination with the SELD get a separate budget or mechanism to allocate the required funds.

The consultants are required to develop an Operation and Maintenance Manual for Developed New Schools, which addresses the needs of all of the modular designs.

4.3 Completion and handover Phase:

1. Provide a report certifying the completed works as per approved project design and specification. Completion report for each site to be uploaded into the profiles.
2. Generate project completion certificate and obtain relevant stakeholders' endorsement before issuance.
3. Handover of the completed projects to department through PMIU/RSU.
4. Issue the defects liability period certificate for education facilities after its completion.

4.4 Comprehensive responsibilities/requirements of the Consultancy Firm:

1. The Consulting Firm will develop cost estimates, considering *principles of cost-effectiveness in the planning, design, construction, and operation under the project,* consistent with the World Bank Procurement Regulations. It will carry out a comprehensive market survey and rate analysis and will submit market rates for construction materials.
2. Ensure adherence and implementation of ESMF, related site-specific E&S instruments, and other relevant guidelines during different stages of construction work. The Firm staff will attend an orientation session on ESMF/ESMP/site-specific E&S instruments/checklists and other relevant documents and guidelines. E&S Monitoring checklists will be filled by the Field Engineers/Inspectors/ARE, coordinating and submitting the hard and soft copies of the data (E&S Monitoring checklists and reports) to the Client on regular basis, through Environment and Social Safeguard Officer (ESO). Any other tasks required for smooth implementation of ESMFguidelinesand as per ESF policy. Ensure that bidding documents have been duly customized to cater for these requirements.
3. Detailed drawings and plans should show all components of each of the school facilities and to ensure transparency of information. The same detailed plan and architectural drawings will be displayed in each school facility.
4. Ensure high quality of engineering and architectural designs, specifications, bidding documents, in compliance with World Bank Procurement Regulations and Environmental and Social Framework policy requirements, for school facilities rehabilitation and construction works. Ensure that all works are carried out as per the industry standards, local codes (where applicable), and incorporating E&S guidelines in a manner acceptable to the World Bank.
5. The designs should be compliant with GoS requirements, specifically considering seismic zone and climate condition, innovative, locally appropriate, employing best quality, well sustained available materials, adherence to climatic conditions and vulnerability to natural disasters (flood, earthquake, landslide, etc.) of region/area.
6. Provision of ramp and handrails for school building and latrine block to provide safe access to physically challenged children.
7. The accessories, i.e., *pathways, planters, play area, school children play items, swings, slides, rope extensions etc.* will be incorporated in the design and specification and must conform to the industry standards.

8. Make available the soft version of any documents related to this project available to the Client upon demand. Hard copies should be available at the a) project site, b) district office.
9. Collect and share the geo tagged pictures of all materials, including cement, steel, bricks, sand, aggregate, steel I-beams, wooden plates, doors, windows, and paint at each site and for each construction stage and upload onto each of the education facility profile.
10. Make changes, alterations, or re-design, if required by the Client during the supervision phase and support with the variation orders.
11. Provide contract management support throughout the construction phase of the project and till the end of defects liability period.
12. Verify through interim payment certificate (IPC), pictures, and endorsement of the resident engineer and chief resident engineer, of all the bills submitted by Contractor(s) to the Client through established payment mechanism and follow up for the payment of bills to the Contractor(s).
13. Ensure regular coordination with the Client and make sure concerns raised for assuring the quality of the activities are resolved and meets the design requirements.
14. Participate in the review meetings (*weekly/fortnightly/monthly/quarterly or as Client schedules*) for progress updates and issues sharing.

4.5 Services for Construction Supervision (Resident Supervision) in each district:

1. The Consulting Firm shall perform duties of "the Engineer" / Project Manager as per Client's agreement with the Contractor(s) to supervise construction with the best professional and consulting standards to ensure that the buildings are constructed, and missing facilities are provided satisfactorily and ESMP compliances are adopted.
2. The Consulting Firm is expected to assign field personnel plus environmental and social experts of professional caliber and in sufficient number as deemed necessary by them in consultation with the Client.
3. In carrying out the assignment, the Consulting Firm shall undertake the following works:
    a) Issue instructions to the Contractor(s) and provide engineering and Environmental and Safeguards E&S supervision to the execution of works.
    b) Ensure quality control through laboratory tests and other non-destructive tests at the expense of the Contractor(s).
    c) Make measurements of the work done as basis for running payments to the Contractor(s). Detailed measurements of the works shall however be recorded jointly with the Contractor(s) and verified by the Engineer / Project Manager as duplicate record and shall be attached with the Contractor(s)'s bills.
    d) Issue variation orders with approval of the Client.
    e) The Consulting Firm shall check systematically the progress of work according to the construction schedule of the agreement and shall submit monthly progress report in the agreed prescribed form along with data and evidence in the form of geo-tagged photographs, and GPS coordinates with elevation to the Client pointing out the deficiencies and suggest remedial measures. The Consulting Firm will also be responsible for creating and maintaining an online database for project data and evidence.
    f) Review and approve "As Built" drawings along with ESMF/ESMP and site-specific E&S instruments prepared by the Contractor(s).
    g) The Consulting Firm shall form its own sources; establish a site office to meet the day-to-day executions of the project activities, hold meetings with Contractor(s) and the same should be part of the Consulting Firm's financial proposal.
    h) The Consulting Firm shall certify the Contractor(s)'s running payments clearly indicating that the quality of work executed is according to the specifications, design, drawings, technically sanctioned estimate, and contract agreement and make recommendations for payment to the Contractor(s) along with the required test reports. The Consulting Firm shall further be responsible for quality and quantity of works.
    i) The Consulting Firm shall supervise the Contractor(s) in all matters concerning community and workers safety and care including disaster proofing and emergency management of the work and advise the Client on any problem arising in the construction work during its execution.
    j) The Consulting Firm shall certify that the construction material brought at site by the Contractor(s) is in accordance with the specifications and is tested as per standard practices. The reports in respect of receipt and test of materials shall be submitted to the Client on weekly basis in the prescribed forms.
    k) The Consulting Firm shall carry out detailed final inspection of the work and shall recommend to the Client for issuance of completion certificate stating that the work has been completed as per design, drawings, standard specifications, and contract agreement.

l) One month prior to the expiry of completion period, the Consulting Firm shall carry out a detailed final inspection of the work and submit a report to the Client pointing out the defects in the work, if any.
m) The Consulting Firm shall be responsible for getting all such defects rectified from the concerned Contractor(s) and final payment of the Contractor(s) shall be verified only after satisfactory removal of the defects.
n) The Client maintains all the rights to increase or decrease the quantum of work without assigning any reason.
o) Client's technical experts may regularly visit the sites for checking resident supervision of the Consulting and the quality of work executed by the Contractor(s) and issue necessary instructions to the Consulting or Contractor(s) for proper execution of the work at site.
p) Environmental Guidelines: The Consulting Firm will provide guidance and support implementation of agreed environment guidelines and frameworks under the project. The Consulting Firm will be expected to be cognizant of the environmental guidelines as agreed with the World Bank in the project agreements and apply them at all stages of the construction and rehabilitation work.

5.0 DELIVERABLES AND REPORTING REQUIREMENTS

Part E: Reporting Requirements/ Schedule of Activities and Deliverables:

The Consulting Firm will complete the assignment as per following schedule. The design phase activities must be completed within **Twelve Months** after the signing of the consulting Firm contract.

Stage-I& Stage-II: Submission of Technical need assessment forms/ reports and Master plan/ design proposal, feasibility study for each school along with Technical Survey Report for all category schools within sixty days (90) days of the effectiveness of contract.Concurrently **Stage-II –** Modular Designs and Environmental and Social Management Plans shall be ready along with the Need Assessment Exercise within sixty days (90) days.

Stage-III: Preparation of site specific detailed structural and architectural designs for all the schools, BOQs duly supported by associated drawing and specifications according the the proposed timelines by the client provided in the Table 1: Design Phase Activities

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Stage-IV: Preparation and submission of technical specifications, drawings, BOQs relevant bidding document's including packaging of the works activities as per Procurement Plan covering school according to the Table 1: Design Phase Activities

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Stage-V: Submission of signed hard copies and soft copies of Monthly Progress Reports both in design phase (for design progress) and during supervision phase for (supervision and implementation progress together with covering of all contract management aspects)(Report format will be designed and agreed in consultation with the Client) along with photographs and coordinates by 05th of every month as per details of format delineated in Section (**Services for Construction Supervision (Resident Supervision) in each district)**. Also provide two inspection reports of each ongoing site per month, a quarterly and an annual progress report in narrative form containing all site photographs shall also be submitted.

The consulting Firm will provide quality assurance certificates and quality management plan against each site and will furnish sufficient evidencei.e.,Measurement Book/IPC, Completion Certificate, certify defect liability periodetc.

6.0 STAFFING AND RESPONSIBILITIES

The Consulting Firm is responsible and expected to establish a main office and regional office (s) as per the requirements, maximum 10 ongoing sites per one engineer and five inspectors, or as proposed by the Consultants. The timing for the establishment of the offices and the number of staff member in each team would be planned according to the workload and the prioritized activities on which the team is

working at a given time. Below are the minimum required staffing requirements. Consultant may propose any changes in the below given staff inputto improve upon the Design and Supervision work.

Staffing Breakup / Man Months

Phase (Design of 300 Schools)

S. No	Position	Type of staff	No. of persons	Months	Type of Input
1	Project Manager	Key Expert	1	12	Full Time
2	Senior Architect	Key Expert	1	6	Full Time
3	Project Coordinator	Key Expert	1	12	Full Time
4	Architect (Female)	Key Expert	1	9	Full Time
5	Structure Engineer	Key Expert	1	9	Full Time
6	Senior Environmental Engineer	Key Expert	2	9	Full Time
	Social and Gender Specialist	Key Expert	2	9	Full Time
7	Electrical Engineer	Key Expert	1	9	Full Time
8	Utility/MEP Design Engineer	Key Expert	1	9	Full Time
9	Procurement and Contract ManagementSpecialist	Key Expert	1	9	Full Time
10	Survey Engineer	Support Staff	6	6	Full Time
11	Junior Design Engineer	Support Staff	6	6	Full Time
12	Field Data Engineer / MIS Manager	Support Staff	1	6	Full Time
13	Quantity Surveyor	Support Staff	6	6	Full Time
14	Cad Operator	Support Staff	6	6	Full Time
15	Site Surveyor	Support Staff	6	4	Full Time

Phase (Supervision of 300 Schools)

S.No	Position		No.	Months	Status
1	Project Manager	Key Expert	1	30	
2	Project Coordinator	Key Expert	1	30	
3	Resident Engineer @ 300 Schools	Key Expert	1	24	
4	Material Engineer @ 300 Schools	Key Expert	1	24	
5	Assistant Resident Engineer @ every district	Non Key Expert	6	24	
6	Senior Contract Engineer @ 300 Schools	Key Expert	1	24	
7	Contract Engineer @ 300 Schools	Non Key Expert	1	24	
8	Field Data Engineer / MIS Manager	Non Key Expert	1	24	
9	Site Inspectors @ two persons every district	Support Staff	12	24	

10	Environmental Engineer	Key Expert	1	24	
	Social Officer	Key Expert	1	24	
11	HSE Inspectors @ every Districts	Support Staff	6	24	
12	Sr. Quantity Surveyor	Support Staff	1	24	
13	Quantity Surveyor@ two person in 300 schools	Support Staff	2	24	
14	Cad Operator@ two person in 300 schools	Support Staff	2	24	
15	Utility Design & Execution Engineer (Water Filter Plants & Solar Panels)	Key Expert	1	24	

Qualification, Experience and Job Description of Design, Supervision and Quality Assurance Staff

Title	**Project Manager** (the Engineer) for both Phases
Qualification	**BE Civil Engineering (16 years of education), preferably master's in civil engineering, Construction Management, Project Management / MBAor related field**
Experience	At least 15 years of experience and required to have familiarity with the construction practices of vertical structures (preferably schools), knowledge of project management and implementation of environmental & social safeguards
Job Description	● Reports to the Client and focal person of the firm. ● Assumes overall responsibility for management, planning, design and supervision of the team. ● Undertakes responsibility for satisfactory completion of project as per design, specifications and on agreed cost and time frame. ● Works as the "the Engineer" / Project Manager as per Client's agreement for the assigned engineering and supervision activities with the best professional and consulting standards to ensure that the assignment is completed satisfactorily. ● Give feedback during the design phase for each of the facility to the principal architect and structure engineer and make sure overall progress and quality is achieved as per best international practices. Responsible for preparation of the specifications related to the structure elements and overall sub-projects in consultation with the Architect and TL. ● Keeps the Client informed of technical issues and the progress of all works both by direct contacts and through discussions or correspondence.

	● Attends, at Project level, all meetings as required and keep a record of all such meetings. ● Assists Clients in preparation of annual work plan and budget. ● Assists the Client in any project issue which the Employer may require. ● Assists in preparation of all reports and the project completion report (PCR). ● Assists the Client in preparing the response to Audit queries. ● Assists the Client in preparing response to financiers or other authority's queries, observations, requirements etc. ● Coordinates with all related Client's organizations for project issues, coordinates with M&E and Development section in fulfilling project objectives. ● Ensure adherence and implementation of ESMP guidelines at all the project focused sites ● Certify and develop IPCs of all the payments along with supporting documents and submit to the Client for approval and payment

Title	Project Coordinator for both Phases
Qualification	MBA/MPA or related field
Experience	At least 15 years of experience and required to have familiarity with the social development projects, financial management, experience working with Government and Donor Funding Agencies
Job Description	● Assists PM to coordinate with all line agencies at the field and arrange the field visits of the Technical Team ● Arrange regional/site offices and logistics for team. ● Coordinate with the PMIU for Administrative and Management matters. ● Arrange trainings of the Technical Staff to understand the design policy of schools, construction methodology and supervision protocols ● Assist the PM to implement any directives of Government and PMIU time to time to assure quality and timely completion of the works at site. ● His main role will be to coordinate with all stakeholders of the project.
Title	**Architect**
Qualification	Bachelors **(16 years of education)** / Master's Degree in Architecture, Urban Planning, or related field
Experience	The Principal Architect shall have at least 10 years of experience in designing buildings and preferably designing schools.
Job Description	● The Principal Architect Engineer would be responsible for the Modular

	Design, site specific design preparation of architecture documents, functional specifications, design documents, and architecture diagrams according to project goals and objectives ● Directly manage the development of architecture design and preliminary construction details in close coordination with the Structural Engineer. ● Ensure architecture design adheres to the established specifications and standards related to Education Facilities ● Make sure projects stay within building by laws, safety regulations and budget ● Make sure design, plans and drawings don't have too much of a negative impact on the environment and the designs meets the industry standards for such facilities. ● Plan best utilization of spaces available for new construction; and ● Consider environment friendly and green aspect in the designs of the education facilities ● Any other tasks assigned by the TL or the client

Title	Procurement & Contract Management Specialist
Qualification	Bachelor **(16 years of education)**/master's degree with a major in Civil Engineering, procurement, Law or Business Administration or related field
Experience	At least 10 years of experience in Procurement and Contract Administration
Job Description	● Assist in preparation of bidding documents, RFQs, RFBs and assists in procurement processes and contract terms and conditions as per World Bank Procurement Regulations ● Assist in bid evaluation and overall procurement process from request through contract awards ● Ensure efficient contract management and provide timely inputs to avoid time and cost over-runs. ● Evaluate Contractor(s) claims and support in dispute resolution if required ● Assist in contract administration and ensure compliances as per contract terms and conditions. ● Provide early warning to both Contractor(s) and employers on any events ● Keep checks on all contractual matters and make sure all the contractual terms and conditions are fulfilled ● Any other tasks assigned by the TL or the client

Title	**Structural Engineer**
Qualification	Bachelor's Degree **(16 years of education)** in Civil Engineering and preferably Master's in structure engineering
Experience	At least (10) years relevant experience as Structural Design Engineer preferably of public Buildings such as education and health facilities..
Job Description	● Preparation of design criteria and Standards and finalization of the design codes to be adopted ● Review and advice on seismically sound design standards and codes for buildings and other facilities involved in project ● Guide the Architect and CAD operators towards carrying out the structure analysis and design of the buildings and allied facilities. ● Provide details about existing structures, damages and assessment ● Inspect the site and collect the condition data for the design review and finalization of the structural designs and necessary changes if any ● Reviewing the structure design at appropriate intervals during the implementation. ● Follow construction safety guidelines and incorporate in the structure designs ● Choose appropriate materials based on structural specifications ● Measure loads and pressures caused by environmental / natural disasters and accordingly design the facilities ● Guide the CAD Team in preparation of Drawings and Details of all the structural elements in the designs and drawings. ● Finalize the Structure Design Reports and assist in preparation of various reports and deliverables ● Any other tasks assigned by the TL or the client

Title	Utility Design & Execution Engineer (Water Filter Plants & Solar Panels)
Qualification	BE Civil/Mechanical/Energy Environment/Chemical Engineering (16 years of education), Master's in Environmental Engineering
Experience	At least 07 years of experience and required to have familiarity with the water sample analysis, water treatment, filtration units, design and execution of primary treatment of sewage generated from small community or schools, assist to select best alternate source of energy, implementation of Climate Response Indicator at site.
Job Description	● This position requires practical experience of selection and implementation of the best suited water filtration units in all schools based on the site-specific water quality assessment. ● Assist team to design and execute the best solution for wastewater treatment and recycling. ● Assist the design team to select the trees which can use the primary or secondary treated water and also help in environmental negative impacts. ● Selection and implementation of the alternate source of power in schools ● Help in selection of Environment Friendly material to reduce the environmental impacts of constructed schools. ● Any other task related to the assignment.

Title	**Material Engineer**
Qualification	Bachelor's Degree in (Civil Engineering) or BSc. (Geology) **(16 years of education)**
Experience	At least (10) years of relevant experience as Material Engineer on construction supervision projects
Job Description	● Conduct or supervise tests on raw materials or finished products in order to ensure their quality. ● He / She will assist and will be responsible for quality of materials used in construction by performing field and laboratory tests and certifying their acceptance based on recommended specifications for the material. ● Design and direct the testing and/or control of processing procedures. ● Monitor material quality/performance and evaluate material deterioration. ● Plan and implement laboratory operations and procedures to check quality of product as per specification and performance standards. ● Make recommendations for material selection based on design objectives, such as strength, weight, heat resistance and environment friendly aspects etc.

Title	Junior Design Engineer
Qualification	Bachelor's Degree in Civil Engineering/ **(16 years of education)**
Experience	At least 3 years' of experience in building design related projects
Job Description	● Assess the need for the construction needs and devise the scope of work of each construction facility, execute the surveys, get the initial data from the field for the design input and collect the baseline data. ● Support in sharing the field level design input with the Architects at office level with the recommendation on most appropriate designs meeting the current construction norms. ● Review and recommend approval and/or issuing working drawings, approval of the setting out of the works, and instruction to the field staff on structural design. ● Assist in implementing the designs and coordinate for modifying the

	designs for cost effectiveness and technical suitability as per the design criteria and features shared if and when required. ● Ensure adherence and implementation of ESMP guidelines during the design phase of the project in the focused sites in respective district. ● Collect the data on ESMP checklist of the siting stage and endorsed the design input required for the purpose, i.e., provision of ramps with handrail, provision of toilets of disables, need for planters in the schools. ● Identify the need for MHM and incorporate the support in the design of the toilet to ease out the process. ● Enter the data of ESMP checklists on dashboard of the siting stage and the enter the data as required. ● Review the designs shared by the architects and validate and take corrective if required on immediate basis. ● To collect and share the soft and hard copies of the construction drawings for the bidding process and clarify the design input where and when required. ● To check and confirm the validity of the design implemented during the construction phase. ● Provide feedback on variation at any stage to the team leader of any construction activity and prepare support documents for submission and approvals. ● Develop close coordination with the field engineer and field staff on a regular basis and update the progress. ● Any other task assigned for the smooth implementation of the project and on ESMP guidelines. ● Perform other duties as required for the success of Project and other tasks assigned by the TL or the client

Title	Assistant Resident Engineer
Qualification	Bachelor's Degree in Civil Engineering/B-Tech Hons in Civil Engineering **(16 years of education)**.
Experience	At least 7 years' and for B-Tech at least 12 years' experience in building construction related projects
Job Description	● Supervise the scope of work, execute the surveys, get the initial data from the design team and share the collected baseline data and supervise during the construction phase and provide technical

	assistance for the purpose during the implementation of the project. ● Review and recommend approval and/or issuing working drawings, approval of the setting out of the works, and instruction to the field staff on structural design. ● Assist in implementing the designs and coordinate for modifying the designs for cost effectiveness and technical suitability as per the design criteria and features shared when required. ● Ensure adherence and implementation of ESMP guidelines at all the project focused sites in respective district. ● Collect the data of ESMP checklist in coordination with the social specialist during different phases of project life. ● Enter the data of ESMP checklists on dashboard. ● Supervise the construction facilities in detail and report the progress of each activity in the field. ● Provide feedback on variation at any stage to the team leader of any construction activity and prepare support documents for submission and approvals. ● Develop close coordination with the field engineer and field staff on a regular basis and update the progress. ● Provide input on updating the MIS dashboard set in Client by pursuing with the field team for uploading the stage wise data on regular basis. ● Regularly follow up with the Contractor(s) for quality and progress of work and report accordingly. ● Assist TL / Project Manager in Issuance of timely notices to the Contractor(s) for delay progress and quality issues by maintaining logbook on site and report to the concerned stakeholders on urgent basis. ● Overall responsible for quality assurance at the field and timely reporting to the TL/ Project Manager of any field related issues. ● Any other task assigned for the smooth implementation of the project and on ESMP guidelines. ● Perform other duties as required for the success of Project and other tasks assigned by the TL or the client

Title	Field Engineer / Inspector
Qualification	Bachelor's Degree in Civil Engineering **(16 years of education)** or 3 years Diploma of Associate Engineering with 8 Years of experience in supervising and monitoring building infrastructures.

Experience	At least 5 year's relevant experience in building construction related projects in case of B. Sc engineer and 8 + years of experience in case DAE holder
Job Description	● Assist the Team Leader/Assistant Resident Engineer and other relevant staff in planning and supervision of construction activities. ● Support all rehabilitation and construction activities undertaken by Contractor(s) in the relevant districts with improved coordination and timely technical inputs in order to effectively meet completion targets. ● Supervise the implementation of the construction activities based on the design and specifications, review the design if required during the implementation, support Contractor(s) on procurement of project material as per standard specifications and guidelines provided by Material Engineer. ● Undertake extensive field visits to assess the quality of construction activities, provide input on quality of material, initiate material tests through Contractor(s) where required as per guidelines to ensure quality. ● Supervise Contractor(s) and provide advice and support to help overcome any shortcomings in the construction quality and management procedures. ● Assist the Team leader/ Assistant Resident Engineer in timely submission of monthly progress reports on all rehabilitation & construction activities undertaken in the respective districts. ● Check the payments and forward to the ARE on achievement of milestones as agreed in the contracts and ensure timely submissions of payments/bills. ● Ensure testing of material at site from laboratory under the guidance of Material Engineer / TL / ARE. ● Conduct regular field on project locations, guide and supervise process of schedule implementation. ● Report on the progress of work using Android tools to timely update the MIS Dashboard where applicable. ● Report on the quality of work on regular basis and issue notices to the Contractor(s) through ARE on urgent basis for adopting corrective measures. ● Maintain the logbook on site put up the notes on regular basis on progress and quality of all construction works and highlight during each visit. ● Ensure adherence and implementation of ESMP guidelines and coordinate with social specialist at all the project focused sites in respective district.

	● Collect the data of ESMP checklists during different phases of project life and to submit to social specialist of Social Mobilization implementing partner of the Client. ● Any other task assigned for the smooth implementation by ARE and TL.

Title	CAD Operator
Qualification	DAE – Civil with diploma in Auto-CAD
Experience	At least three (03) years of drafting engineering drawings / designs on Auto-CAD software experience
Job Description	● Work with the Architect and Structure Design Engineer for preparation of architectural and structural drawings, ● Assist in preparation of the drawings and details required by the design / supervision team. ● Any other task assigned by the Team Leader

Title	Quantity Surveyor
Qualification	DAE – Civil
Experience	At least three (03) years of experience in rate analysis, civil works specifications, development of bill of quantities.
Job Description	Design Phase: ● Work with Architect, Structure Engineer, and field engineers to develop cost estimates of the education facilities based on final drawings and specifications. ● To develop quantities of all the civil works based on the specification provided or developed. ● Develop final BOQs for bidding documents based on finalized civil works packages. ● Responsible for any estimates revisions and make sure that final BOQs are included in the bidding documents. ● To support in the development of bidding documents against each construction activity and summarize them in packages developed for the bidding process. ● To facilitate in the evaluation of bidding by checking the bill of quantities and to take corrective measure wherever required Supervision Phase: ● Work with the chief resident engineer, resident engineer, and the field engineer for IPCs checking and confirmation that quantities are accurately entered. ● . ● To check the bills submitted by the Contractor(s) and validate through the field engineer/inspector and submit it to the resident engineer for verification.

	● To identify the need and plot the variation orders wherever required on the advised of resident engineer. ● To develop bill of quantities on the variation required in the construction facility during the execution of the project. ● To support the variation order with all the documents required for the approval. ● Any other task assigned by the RE and Team Leader

Title	**Environmental Engineer**
Qualification	Bachelor's degree (Master degree preferable) in Environmental Sciences/Management/Engineering or a related discipline
Experience	At least 5 years' experience in leading productive related programs for a fairly large organization. Should have at least two years of relevant experience working with international donors/organizations such as World Bank/Asian Development Bank. Solid understanding of issues relating to environmental and social issues and mitigation.
Job Description	● Maintain close coordination with the ESSO (Education PMUs) for the adherence of ESMP guidelines. ● Maintain close coordination with the Resident/Site Engineer for implementation and supervision of E&S aspects on-site, on daily basis. ● Ensure and implement SELECT, Environment and Social Management Plan (ESMP) and the environmental guidelines in the field during the siting, construction and operation phases of the schools facilities as per the instructions of ESSO. ● Regularlyvisit the school's construction sites, in order to monitor the compliance of ESMP checklist's guidelines, and to determine their effectiveness. ● Report any issue pertaining to ESMP to ESSO and take corrective measures as per the guidelines of ESSO to address the issue(s). ● Maintain close coordination with the Site Engineer and Resident Engineers (REs) to collect the data of ESMP checklists of all the three phases (Siting, Construction and Operation). ● Maintain close coordination with the Site Engineer and Resident Engineers (REs) to collect the data of ESMP baseline checklist, implementation and supervision of E&S aspects on-site, on daily basis. ● Follow-up on previous reports and actions for closure. ● Review of C-ESMPs prepared by the project contractors ● Participate in the E&S related meetings with consultants,construction contractors and various subcontractors asrequired. ● Conduct and/or facilitate the reporting and investigation of accidents/incidents and maintain oversight regarding the follow-up and close-out of corrective actions.

	● Support PMIU/RSU by preparing training modules and programs for the implementation, monitoring and reporting of E&S instruments as per World Bank ESF and local rules and regulations. ● Data entry of Environment and Social Management Plan (ESMP)/site-specific instruments baseline checklist. ● Maintain a record of all the filled monitoring checklists and submit the collected checklist to Environment and Social Safeguard Officer at PMU on monthly basis. ● Data entry of Environment and Social Management Plan (ESMP))/site-specific instruments checklists on MIS dashboard. ● Ensure site restoration after completion of civil works in accordance with ESMF/ESMP/ESF guidelines. ● Any other task assigned by the ESSO for the smooth implementation of ESMP throughout the project duration.

Title	**Social and Gender Specialist**
Qualification	Bachelor's degree (Master degree preferable) in Social Sciences, Gender, Development Studies or a related discipline
Experience	At least 5 years' experience in implementing social programs for a fairly large organization. Should have at least two years of relevant experience working with international donors/organizations such as World Bank/Asian Development Bank. Solid understanding of issues relating to environmental and social issues and mitigation. Knowledge of the World Bank Environmental and Social Framework is preferable.
Job Description	● Maintain close coordination with the PMU for the adherence of ESMF/ESMP guidelines. ● Maintain close coordination with the Resident/Site Engineer for implementation and supervision of social aspects on-site, on daily basis. ● Ensure and implement the social requirements of the SELECT Environment and Social Management Framework (ESMF), ESMPs and site-specific E&S instruments. ● Ensure and implement the following social instrument in the field during the siting, construction and operation phases of the schools' facilities: o Labor Management Procedures (LMP) o Stakeholder Engagement Plan (SEP) o Community Health and Safety Plan o Gender Action Framework o and Grievance Redressal Mechanism (GRM) ● Regularly visit the school's construction sites, in order to monitor the compliance of E&S checklist's guidelines, and to determine their effectiveness.

	● Report any issues pertaining to implementation of E&S instruments to PMU and take corrective measures as per the guidelines of PMU Social Specialist. ● Maintain close coordination with the Site Engineer and Resident Engineers (REs) to collect the data of E&S instruments and checklists of all the three phases (Siting, Construction and Operation). ● Maintain close coordination with the Site Engineer and Resident Engineers (REs) to collect the data of ESMP baseline checklist, implementation and supervision of E&S aspects on-site, on daily basis. ● Follow-up on previous reports and actions for closure. ● Review of ESMPs and site-specific E&S instruments prepared by the project contractors ● Participate in the E&S related meetings with consultants, construction contractors and various subcontractors asrequired. ● Conduct and/or facilitate the reporting and investigation of accidents/incidents and maintain oversight regarding the follow-up and close-out of corrective actions. ● Report any grievances and facilitate resolution as per the requirements of the SELECT Grievance Redressal Mechanism (GRM) ● Support PMIU/RSU by preparing training modules and programs for the implementation, monitoring and reporting of E&S instruments as per World Bank ESF and local rules and regulations. ● Data entry of Environment and Social Management Plan (ESMP)/site-specific instruments baseline checklist. ● Maintain a record of all the filled social monitoring checklists and submit the collected checklist to PMU on monthly basis. ● Data entry of social aspects of Environment and Social Management Plan (ESMP)/site-specific instruments checklists on MIS dashboard. ● Ensure site restoration after completion of civil works in accordance with ESMF/ESMP/ESF guidelines. ● Any other task assigned by the PMU for the smooth implementation of ESMP/ESMF throughout the project duration.

7.0Coordination

The Consulting Firm will report to CPM/PD RSU & PC-PMIU and will coordinate with various specialists and staff of the Client in dispensing services. It will also liaise with various departments of GoS for matters directly related to discharge of responsibilities under contract.

8.0 Qualification of Firm

Minimum 10 years of experience in the field of Design, Environmental & Social Management& Supervision of Construction of the buildings and related structures works. Should have completed at least 3 projects of similar scale and complexity in past 8 years (preferably school buildings) . Should have logistical capacity. The firm should have technical staff conforming to the required scope of work covered under ToRs

9.0 Selection Process

A consulting firm(s)/ Joint Venture(s) will be selected in accordance with (QCBS) Selection Procurement Method of the "World Bank Procurement Regulations for Investment Project Financing Goods, Works, Non-Consulting and Consulting Services" (July 2016) revised November 2017 and August 2018.