DRAFT TERMS OF REFERENCE
Consultancy Services for:
Design Review and Milestone Based Top Construction Supervision Consultant (DRMBSTCSC)

Loan No. 4409-PAK(COL): Sindh Secondary Education Improvement Project – Additional Financing (SSEIP-AF)

I. BACKGROUND

1. The emergency assistance loan for the additional financing of the Sindh Secondary Education Improvement Project (the project) was prepared in response to the Government of Pakistan's request to the Asian Development Bank (ADB) on 19 July 2023 to support its post- flood recovery processes. The support is a part about $1.5 billion in 2023–2025 which ADB pledged at the International Conference on Climate Resilient Pakistan co-hosted by the Government of Pakistan and the United Nations in Geneva in January 2023. This aims at accelerating the country's overall recovery from the flood which occurred in August 2022. The project will reconstruct 722 flood fully damaged schools in 15 most affected *tehsils*[1] (an administrative subdivision of a district) with disaster- and climate-resilient, and gender-responsive designs for recovery of serious learning loss of girls and boys in the province.

2. The proposed project is aligned with the following impact: inclusive and equitable quality education for all ensured. The outcome is: inclusiveness of secondary education system in Sindh is increased. The project will support this outcome through the outputs of the ongoing project:[2] (i) new secondary school blocks constructed and operated under Education Management Organizations (EMO) program, (ii) teaching capacity in five (05) key subjects improved, and (iii) secondary education examination system strengthened. A new output presented in the following para will be supported under the project.

3. **Output 4**. **Flood-Damaged Schools Reconstructed with Disaster and Climate Resilientand Gender Responsive Designs.** The project will fund reconstruction of 722 schools[3] (fully damaged schools) in the 15 most affected tehsils (an administrative subdivision of a district) in the five (05) districts (footnote 1) in north Sindh. At least 100,000 students at primary and secondary schools (grades 1–12) will have access to schools. Priorities will be given to girls' schools and mixed schools (boys and girls). The schools will have disaster and climate resilient designs. They integrate resilient materials and architecturalelements which are robust and adapt to climatic changes.

II. PROJECT IMPLEMENTATION

4. The project will be implemented over 4 years (2024 to 2027). The School Education and Literacy Department (SELD) will be the Executing Agency (EA) and

[1] These tehsils are (i) Bhirya, (ii) Dadu, (iii) Faiz Ganj, (iv) Kambar, (v) Kandiaro, (vi) Khairpur Mirs, (vii) Kingri, (viii) Kot Diji, (ix) Larkana, (x) Mehrabpur, (xi) Moro, (xii) Naseerabad, (xiii) Naushero Feroze, (xiv) Sobhodero, and (xv) Mirwah.

2 ADB. 2019. Report and Recommendation of the President to the Board of Directors: Proposed Loan to Pakistan for the Sindh Secondary Education Improvement Project. Manila. Approved on 25 October 2019.

[3] Selection criteria are (i) at least 100 enrolled students, (ii) girls' schools and mix schools, (iii) schools which are not supported by other development partners and the government, (iii) safeguard categories B and C. At implementationstage, subject to cost savings in the loan, additional schools may be included or considered by the government depending on the outcome of the due diligence work.

Project Implementation Unit (PIU) for existing Loan 3845-PAK: Sindh Secondary Education Improvement Project (SSEIP) will work as Implementation Agency (IA). Under the guidance of a Project Steering Committee, the SELD will be responsible for project execution, with the PIU responsible for day-to-day project implementation. Procurement will follow the ADB Procurement Policy (2017, as amended from time to time) and Procurement Regulations for ADB Borrowers (2017, as amended from time to time).

III. OBJECTIVES OF THE ASSIGNMENT

5. The Sindh Secondary Education Improvement Project (SSEIP), in charge of the implementation of the additional financing of the Project through its Project Implementation Unit, intends to use part of the loan proceeds thereof for payments under the Contract: Design Review and Milestone Based Top Construction Supervision Consultant for "Reconstruction of **361** flood affected fully damaged schools, in six (06) tehsils of District Khairpur Mirs, Sindh on climate and disaster resilient, gender-friendly integrated Light Gauge Steel Framing (LGSF) Structure Technology, based upon up to 12 prototypes to be replicated, with solar panels, through Engineering, Procurement and Construction (EPC) contracts."

6. The Project Director, PIU, SSEIP-SELD, GoS invites consultants, having extensive experience in design, design review & construction supervision of projects of building (Light Gauge Steel Structure), specifically tailored to safeguard the successful completion of the project.

7. A firm will be selected under QCBS (90:10) procedures using a Full Technical Proposal (FTP) format, in accordance with the policies of the Bank detailed in the ADB's Procurement Policy (2017, as amended from time to time) and Procurement Regulations for ADB Borrowers (2017, as amended from time to time) which can be found at the following website: https://www.adb.org/site/business-opportunities/operational-procurement/consulting/documents.

IV. SCOPE OF SERVICES

8. The consultant's services shall comprise two parts as described below:
   a. Design Review Services – (Part-A)
   b. Top Construction Supervision – (Part-B)

9. ***Part-A: Design Review Services (of up to 12 prototypes):*** *In this phase the Consultant shall be required to review the designs submitted by the EPC Contractors to ensure conformity and adequacy of the design with the Employer's Requirement.*

10. ***Part-B: Milestone Based Construction Supervision Services:*** *In this phase the Consultant shall be required to provide Milestone Based Construction Supervision Services for* ***361 schools*** *in* ***six (06) tehsils /talukas*** *(Khairpur, Faiz Ganj, Kingri, Kot Diji, Mirwah, Sobhodero) of* ***District Khairpur Mirs****.*

11. The details of tasks which needs to be covered under this assignment include but limited to the following:

PART-A: DESIGN REVIEW SERVICES

12. The project has to be carried out in multiple packages involving multiple contractors and the Consultant shall undertake the tasks but not limited to the following for all those packages:

a) The Consultant shall be designated as "Project Manager" for the purposes of administration of the Contracts that will be signed between the Client and the Contractors.
b) The Consultant shall be responsible for all design review/approval related tasks inter alia architectural, structural, mechanical, electrical, and plumbing (MEP) design drawings, plans, and all other specifications prepared by the Contractor. This obligation shall include an assessment of the contractor's submitted design with the relevant codes, standards, and regulations governing school buildings and light gauge steel structures, climate resilience in the light of *Climate Change Risk Assessment Framework* of the Project Administration Manual (PAM), to ensure compliance with the Employer's Requirements.
c) The Consultant shall be responsible to ensure that the contractor has complied with the requirements vis-à-vis community consultations on school design and construction, in which at least 50% of participants are required to be women. The consultant shall obtain complete record of the consultations and hand over the same to the Client in the form of a report.
d) The Consultant shall review the documents submitted for review/approval by the Contractor within 14 days after receipt by the Consultant of any such document requiring the Consultant's approval. The Consultant shall either return one copy, thereof, to the Contractor with its approval endorsed thereon or shall notify the Contractor in writing of its disapproval thereof and the reasons there-for and the modifications that the Consultant proposes. If the Consultant does not take such action within the said 14 days, then the said document shall be deemed to have been approved by the Consultant. This arrangement shall be otherwise governed by the Conditions of Contract (COC) signed between Contractor and the Client.
e) The Consultant shall verify that the design meets the functional requirements of the Light Gauge Steel Structure School Building and ensures safety, efficiency, and durability in light of the Employer's Requirement including WASH facilities for both boys and girls. The verification of the design by the Consultant in accordance with these TORs shall not absolve the Contractors of their fundamental responsibility towards the adequacy, functionality and safety of the design in accordance with the COC signed between Contractor and the Client.
f) The Consultant shall identify any deficiencies, conflicts, or discrepancies in the contractor's submitted design in comparison with Employer's Requirement and provide recommendations for resolution. In such a case the Consultant shall take steps so that any such issues are resolved within a period of seven (07) days between the Contractor and the Consultant.

13. For the **design review/approval phase**, the consultancy contract will be on **lump-sum basis** and will be divided into deliverables, ***(see Table Design Review Deliverables)***, with the timelines given in reporting and deliverable section of these TORs.

14. **Duration of the Services:** Estimated duration of these Services is eleven (11) months.

15. **<u>Part-A:</u> Design Review /Approval Phase: It is envisaged that the Consultant's major input for the design review/ approval activities shall be consumed within the first four (04) months of the assignment.** However, the Consultant shall remain obligated and available to provide its services during the subsequent months for minor design adjustment and review/approval of design for external development.

16. **Deliverables and Reporting Requirements in Design Review Phase**

17. A lump-sum contract shall be used for a duration of four (04) months (for design phase) to start in December 2024 and conclude by end-March 2025 and all deliverables to be completed within contract duration. The consulting team is expected to submit the following required deliverables and reports to the PIU – SSEIP as per table below:

Design Review Phase Deliverables and Reporting Requirements

S/No	Deliverables	Timelines*	Percentage of the Cost of Design Review Phase
1.	Inception Report - Phase A	First month from the commencement of Services of this design review	10%
2.	Interim Payment No. 1: Phase A *(Progress Report No. 01)*	Third month from the commencement of this design review/approval phase	10%
3.	Interim Payment No. 2: Phase A *(Progress Report No. 02)*	Sixth month from the commencement of this design review/approval phase	10%
4.	Interim Payment No. 3: Phase A *(Progress Report No. 03)*	Ninth month from the commencement of this design review/approval phase	10%
5.	Approval of Complete Design submitted by Contractors *(Payments to be adjusted on pro rata type basis)**	Upon issuance of design approval by the Consultant (within four (04) months of mobilization of contractors)	45%
6.	Final Consolidated Report for Phase B	Upon completion of Services for Phase-A	15%

Note: The payments can be further split on pro rata basis in case the Consultant completes the **"design review" in piecemeals.*

18. **TEAM COMPOSITION FOR DESIGN REVIEW PHASE**

S/No	Team Member	No. of Position	Duration (Months)	Person-Months
A	**Key Experts**			
1	Team Leader / Project Manager	01	04	04
2	Architect	02	04	08
3	Light Gauge Steel Building Expert	02	04	08
4	Climate Change Expert	01	04	04
	Sub-Total of [A]	**06**		**24**

S/No	Team Member	No. of Position	Duration (Months)	Person-Months
B	**Non-Key Experts**			
1	Civil Engineer	03	04	12
2	Mechanical Engineer	02	04	08
3	Electrical Engineer	02	04	08
4	Environment and Social Safeguard Specialist	01	04	04
5	Geotechnical Engineer	02	04	08
6	Gender and Community Mobilization Expert	03	04	12
7	Draftsman / AutoCAD Specialist	03	04	12
8	Data Processing Officer	01	04	04
	Sub-Total of [B]	**17**		**68**

19. The Consultant shall prepare and submit reports described in this section. All reports shall be prepared in English, with executive summaries. In addition to three (03) hard copies, an electronic version of each report, in an open format ready for editing, will be submitted.

20. The Consultant shall review school building detailed designs and submit the relevant reports within the specified period. These reports shall include results of the review and outcomes thereof.

PART-B: MILESTONE BASED CONSTRUCTION SUPERVISION (TOP SUPERVISION OF 361 SCHOOLS)

21. The Consultant shall undertake the tasks but not limited to the following:

i. The Consultant shall be designated as "Project Manager" for the purposes of administration of the Contracts that will be signed between the Client and the Contractors.

ii. The Consultant will visit the site and certify that the proposed make-shift arrangements for the schools to be reconstructed after dismantling appropriately meet the Clients requirement in temporary facility which will be provided by the Contractors and ensure that the social, gender and environmental and other related matters are addressed. The Consultant shall ensure compliance with this requirement before the start of dismantling activities.

iii. The Consultant shall be responsible for milestone-based construction supervision and contract administration services of **361 schools**.

iv. The Consultant shall attend inspection, testing and commissioning activities as stipulated in the Condition of the Contract – COC which will be signed between the Contractors and the Client, based on ADB Standard Bidding Document for Plants Construction.

v. The Consultant shall review the contractor's work program and subsequently monitor the progress of works in accordance with the agreed upon work program. The Consultant shall identify whenever there is a need to revise the work program in view of the actual progress of the work.

vi. The consultant shall specify a format for the contractor's monthly progress report. At the end of each month the Consultant shall review the progress

report submitted by the contractors and submit a consolidated progress report covering the whole project to the Client.

vii. The Consultant shall keep an oversight on the contractors' overall work arrangements and shall specify the working hours to be followed at site.

viii. The Consultant shall visit the fabrication facility at regular intervals to keep an oversight on the fabrication process and ensure that the requisite Quality Management System (QMS) are adhered during the process.

ix. The Consultant shall visit the sites at regular intervals as mentioned in the "milestones-based site visits schedule" to keep an oversight on the installation activities and identify any nonconformances for the attention of the contractors. The consultant shall also report such observation to the Client along with its proposed recommendations to ensure that the work is being carried out in accordance with the contract.

x. The Consultant shall document each site visit in the online Monitoring Application (to be provided by the Client) on real time basis from the site including pictures and other required information.

xi. During the site visits the Consultant shall report any identified non compliances with respect to progress of the work and Health, Safety and Environment - HSE particularly in light of the requirements specified under the relevant guideline, regulations, policies etc., of ADB and Clients requirement. The Consultant shall also provide appropriate recommendations to the Contractors with a copy to the Client, to resolve such issues.

xii. During the site visits the Consultant shall report any identified non compliances with respect to Social Safeguards particularly in light of the requirements specified under the relevant guideline, regulations, policies etc., of ADB and Clients requirement. The Consultant shall also provide appropriate recommendations to the Contractors with a copy to the Client, to resolve such issues.

xiii. During the site visits the Consultant shall report any identified non compliances with respect to Climate Change aspects, particularly in light of the requirements specified under the relevant guideline, regulations, policies etc., of ADB and Clients requirement. The Consultant shall also provide appropriate recommendations to the Contractors with a copy to the Client, to resolve such issues.

xiv. During the site visits the Consultant shall inspect the Contractors record in respect of the deployed resources (equipment, manpower etc.,) and ensure that such records are accurately recorded in the contractors' monthly progress report.

xv. The Consultant shall attend tests and inspections at sites in accordance with the agreed milestones-based site visits schedule. Each such instance shall be properly recorded in the form of a report that will be submitted to the Client as part of the consolidated monthly progress report.

xvi. The Consultant shall examine reports of any test/inspection conducted by the third parties and maintain complete record thereof for each site. If required by the Client, the Consultant shall provide its independent opinion on the interpretation of any test report issued by a third party.

xvii. If required at site for quality assurance/quality control purposes, the Consultant may require the Contractors to carry out any additional tests to the extent permitted under the contract.

xviii. The Consultant shall inspect the foundations and all sub-structures before they are covered up on the site in accordance with the agreed upon milestones-based site visits schedule.

xix. The Consultant shall certify payments of the Contractors in accordance with "Terms and Procedures of Payment" on the completion of each payment milestone and receipt of the Contractors application for payment. The certification shall include a certificate of milestone completion issued by the Consultant, accompanied by the Request for Inspection – RFIs and other relevant documents.

xx. Upon completion of pre-commissioning activities and receipt of Contractor request, the Consultant shall satisfy itself that the Contractor has completed the work in accordance with contract and issue a completion certificate in the form specified in the Client's requirement stating that the facility or any part thereof have reached completion as of the date of the contractor's request. If the consultant notices any defects and/or deficiencies, he shall notify the Contractors of such defects and/or deficiencies and shall repeat the procedure describe above.

xxi. The Consultant shall oversee the commissioning activities and issue Operational Acceptance Certificates in consultation with the Client and in accordance with the contract.

xxii. If, during the execution of the works, the Contractors encounter any unforeseen conditions and issue a notice, the Consultant shall promptly consult with the Client and the Contractor and decide upon the actions to be taken to overcome the situation in accordance with the contracts.

xxiii. The Consultant shall steer the process for introducing changes in the facilities (variations) during the execution of the works in accordance with the Contract. This shall include issuing requite instructions, reviewing contractors' estimates for change proposals and providing conclusive recommendations to the Client regarding the change (variations).

xxiv. The Consultant shall respond to all contractual communications including notices of claims issued by the Contractors. The Consultant shall also propose remedial measures to minimize delays, if encountered at site.

xxv. The Consultant shall review and approve all claims (if any) including claims for additional payment and / or addition time, that will be submitted by the Contractors under the contract, within the specified duration. The Consultant shall ensure strict compliance with the timelines stated in the Contract.

xxvi. If required by the Client, the Consultant shall provide reasoned advice to the Client in the matters related to termination for Contractor's default.

xxvii. The Consultant shall provide assistance to the Client in the dispute board proceedings.

xxviii. If a matter is referred to the dispute board, the Consultant shall give instructions to the Contractors as to whether and, if so, how, performance of the contract is to proceed.

xxix. The Consultant shall provide all the necessary support to the Client during the dispute resolution process, as specified in the relevant condition of the contract, or otherwise.

xxx. The Consultant shall be obligated to seek prior approval of the Client, wherever required by the relevant condition of the contract or any statutory requirement.

MILESTONES-BASED SITE VISITS SCHEDULE

S/No	Description	No of Visit
A	**SUB STRUCTURE**	
1	Confirmation of appropriate make-shift arrangement against dismantled school	01
2	Layout/Setting out Confirmation	01
3	Steel reinforcement in foundation and concrete pouring	01
4	Backfilling	01
5	Plinth Level up to PCC flooring	01
B	**SUPERSTRUCTURE / FACILITY**	
6	Completion of 25% of the facility	01
7	Completion of 50% of facility	01
8	Completion of 75% of facility including external development	01
9	Completion of 100% of facility including external development	01
	Total Visits Per School	**09**

22. **TEAM COMPOSITION FOR MILESTONE BASED SUPERVISION SERVICES**

S/No	Team Member	No. of Position	Duration (Months)	Person-Months
A	**Key Experts**			
1	Team Leader / Project Manager	01	07	07
2	Architect	01	02	02
3	Light Gauge Steel Building Expert	02	07	14
4	Climate Change Expert	01	07	07
	Sub-Total of [A]	**05**		**30**
B	**Non-Key Experts**			
1	Civil Engineer	09	07	63
2	Mechanical Engineer	06	07	42
3	Electrical Engineer	03	07	21
4	Environment and Social Safeguard Specialist	01	07	07
5	Geotechnical Engineer	02	07	14
6	Gender and Community Mobilization Expert	01	07	07
7	Field Inspector [Civil]	18	07	126
8	Field Inspector [Mechanical]	12	07	84
9	Field Inspector [Electrical]	06	07	42
10	Quantity Surveyor	04	07	28
	Sub-Total of [B]	**62**		**434**

23. Time period for Top Construction Supervision Phase is estimated as seven (07) months.

24. ToRs of **Key Expert** are given below:

S/No	Position	Qualifications and Experience	Key Tasks
1	**Team Leader (TL) / Project Manager (PM)**	**Qualification:** • Bachelor's degree in Civil Engineering or a related field. Master's degree would be preferred. **Experience:** • Preferably 10 years of experience in building design, construction, and project management preferably in LGS technology. • Experience in reviewing and evaluating detailed engineering designs, with a focus on LGS based design structure. • Knowledge and understanding of relevant international standards and specifications related to building design, such as British Standard (BS) / American Society for Testing and Materials (ASTM) and local applicable building codes, standards, and regulations. • Experience of working on ADB / World Bank projects would be an added advantage.	**Responsibilities:** Overall responsibility for the organization, conduct and delivery of consultancy services and reporting to Client. The Team Leader / PM will head the Consultants' team and will work directly to manage the project and will maintain liaison with Client. Responsibilities of the Team Leader / PM will include, but is not limited to the following: • Review and evaluate the technical specifications, drawings, and other relevant documents related to school design. • Evaluate the adequacy of school building design, taking into account the type of terrain and other climatic conditions. • Evaluate the drainage design and identify any potential issues that may impact the building structure. • Evaluate the materials used in the building design and ensure compliance with relevant standards and specifications. • Provide recommendations for improvement, modifications, or adjustments in the school building design to ensure that the project meets the expected quality standards and performance requirements. • Identify any potential issues or risks that may impact project timelines or cost and provide recommendations for mitigation. • Attend design review meetings with project stakeholders, including PIU-SSEIP, the EPC Contractors and other relevant parties, as required.

S/No	Position	Qualifications and Experience	Key Tasks
			• Provide regular progress updates and reports to the PIU team and stakeholders. • Support PIU in project management activities comprising on quality and cost controlling, subproject scope, achievement of project timelines, ensuring the health and safety of workers, teachers and students on project school sites, and maintenance of environmental standards at project school sites. • Reviewing and assisting in the approval of the contractor's work program, method statements, material sources, QA/QC Plan, HSE/ OHS Plan, SSEMPs. • Preparing and issuing reports / Non-Compliance Notices as agreed with the client. • Approving and/or issuing working drawings, including furniture and other equipment details. • Approving the layouts / setting out of the works and instructing the Contractor. • Certifying work volume and recommending the interim certificates for progress payments. • Maintaining consolidated project accounts, and preparation of financial statements. • Recommending for approval/approving and/or issuing working drawings. • Taking measurements and keeping measurement records. • Maintaining records, correspondence, and diaries. • Certifying completion of part or all of the works. • Providing the Client with complete records and reports and approving contractors' as-built drawings for the works. • To supervise subprojects and assist in preparation of the subproject's contracts completion report.

S/No	Position	Qualifications and Experience	Key Tasks
			• Provide relevant inputs concerning needs for contracts checklists. • Perform any other tasks / assignment that may be assigned by PIU or the ADB.
2	**Architect**	**Qualification:** • Bachelor's degree in Architecture or a related field. Master's degree would be preferred. **Experience:** • Preferably 10 years of experience in architectural design and construction supervision or any other relevant field, preferably in LGS technology. • Experience with light gauge steel structures and educational/health facility projects is desirable. • Experience of working on ADB / World Bank projects would be an added advantage.	**Responsibilities:** The Architect will be responsible for overseeing the design review and construction supervision of light gauge steel structure school buildings. The Architect shall requires ensuring that the architectural designs meet project requirements, safety standards, and are executed according to the planned specifications. The Architect will work closely with the project team, contractors, and stakeholders to deliver high-quality educational facilities. The Expert shall have sound knowledge of current trends in building design, including green building design, climate resilience, furniture design and placement, and the implication of local factors for building design and construction. The Expert shall be responsible for reviewing the Architectural Design, Building Plans and Elevations, reviewing and determining furniture requirements in specification while ensuring they fit in the available space. Responsibilities of Architect will include, but is not limited to the following: • Review and critique architectural designs and plans for light gauge steel structure school buildings. • Ensure that designs comply with local building codes, regulations, and project specifications. • Coordinate with structural, mechanical, and electrical engineers to integrate all aspects of the design. • Provide recommendations for design improvements and value engineering.

S/No	Position	Qualifications and Experience	Key Tasks
			• Oversee the construction process to ensure adherence to architectural plans and specifications. • Conduct site visits to monitor progress and ensure quality control. • Address and resolve any design-related issues that arise during construction. • Ensure that construction activities comply with safety regulations and standards. • Implement quality control measures to ensure that construction meets design specifications and standards. • Conduct inspections and audits to ensure compliance with architectural plans. • Perform any other tasks / assignment that may be assigned by PIU or the ADB
3	**Light Gauge Steel Building Expert**	**Qualification:** • Bachelor's degree in Civil Engineering, Structural Engineering, or a related field. Master's degree would be preferred. **Experience:** • Preferably 10 years of experience in building design and construction in LGS technology. • Experience with light gauge steel structures and educational/health facility projects is desirable. • Experience of working on ADB / World Bank projects would be an added advantage.	**Responsibilities:** The Light Gauge Steel Building Expert will be responsible for providing specialized knowledge and oversight in the design review and construction supervision of light gauge steel structure school buildings. Light Gauge Steel Building Expert shall be responsible for ensuring the structural integrity, safety, and efficiency of the steel structures, and shall work closely with the project team, contractors, and stakeholders to achieve project goals. Responsibilities of Light Gauge Steel Building Expert will include, but is not limited to the following: • Evaluate and validate the design of light gauge steel structures for school buildings. • Ensure designs comply with relevant codes, standards, and best practices for light gauge steel construction. • Collaborate with architects, structural engineers, and other specialists to integrate all design aspects.

S/No	Position	Qualifications and Experience	Key Tasks
			• Recommend design modifications and improvements to enhance structural performance and cost-effectiveness. • Monitor the construction of light gauge steel structures to ensure adherence to approved designs and specifications. • Conduct regular site inspections to assess the quality and progress of construction activities. • Identify and address any structural issues or deviations from the design during construction. • Ensure compliance with safety regulations and construction standards. • Provide technical guidance and support to the project team on light gauge steel construction techniques and best practices. • Stay updated with the latest developments and innovations in light gauge steel technology. • Implement and enforce quality control measures to ensure the structural integrity of light gauge steel buildings. • Perform structural assessments and load calculations to validate design assumptions. • Perform any other tasks / assignment that may be assigned by PIU or the ADB.
4	**Climate Change Expert**	**Qualification:** • Bachelor's degree in Environmental Science, Climate Change, Civil Engineering, or a related field. Master's degree would be preferred. • Advanced degree or certification in Climate Change, Environmental Management, or Sustainability is would also be preferred.	**Responsibilities:** The Climate Change Expert will be responsible for integrating climate resilience and sustainability into the design of light gauge steel structure school buildings. Climate Change Expert will be responsible for assessing climate risks, recommending adaptive strategies, and ensuring that the project aligns with environmental standards and best practices. The Climate Change Expert will work closely with the project team,

S/No	Position	Qualifications and Experience	Key Tasks
		Experience: • Preferably 10 years' experience in climate change adaptation, sustainability, and environmental management of relevant experience. • Proven expertise in integrating climate resilience into design projects, preferably educational facilities. • Experience of working on ADB / World Bank projects would be an added advantage.	contractors, and stakeholders to ensure the project's sustainability goals are met. Responsibilities of Climate Change Expert will include, but is not limited to the following: • Conduct thorough climate risk assessments specific to the project site and surrounding areas. • Identify potential climate-related impacts on the design and future operation of school buildings. • Recommend design modifications and strategies to mitigate identified risks and enhance resilience. • Review architectural and engineering designs for climate resilience and sustainability compliance. • Advise on incorporating sustainable materials, technologies, and design features that reduce the project's carbon footprint and enhance energy efficiency. • Collaborate with architects, structural engineers, and other specialists to integrate climate adaptation measures into the design. • Monitor construction activities to ensure compliance with climate adaptation and sustainability standards. • Conduct site inspections to verify the implementation of climate-resilient design features. • Address and resolve any climate-related issues that arise during construction. • Promote sustainable construction practices, such as waste reduction, water conservation, and energy efficiency. • Implement green building certifications as applicable. • Develop and deliver training sessions on climate change and sustainability for project staff and contractors.

S/No	Position	Qualifications and Experience	Key Tasks
			• Ensure that designs incorporate sustainable construction practices and principles. • Advise on the use of renewable energy sources, water conservation methods, and waste reduction strategies. • Promote the application of green building certifications where applicable. • Ensure that the design review process complies with relevant environmental and climate change regulations, policies, and standards. • Liaise with local authorities and regulatory bodies to obtain necessary approvals and ensure compliance. • Engage with school administrators, local communities, and other stakeholders to gather input and raise awareness about climate resilience measures. • Incorporate stakeholder feedback into the design review process. • Prepare and present reports and presentations on the project's climate resilience and sustainability initiatives. • Ensure compliance with all relevant policies and procedures and adhere to the ADB's Environmental Guidelines. • Perform any other tasks / assignment that may be assigned by PIU or the ADB.

25. Requirement of **Non-Key Expert** and **Support Staff** are given below:

S/No	Position	Qualifications	Project Related Experience
1	**Civil Engineer**	• At least Bachelor's Degree in Civil Engineering – Master's Degree in Civil Engineering or related field would be preferred.	• Preferably 08 years of relevant experience

S/No	Position	Qualifications	Project Related Experience
2	**Mechanical Engineer**	• At least Bachelor's Degree in Mechanical Engineering – Master's Degree in Mechanical Engineering or related field would be preferred.	• Preferably 08 years of relevant experience
3	**Electrical Engineer**	• At least Bachelor's Degree in Electrical Engineering – Master's Degree in Electrical Engineering or related field would be preferred.	• Preferably 08 years of relevant experience
4	**Environment and Social Safeguard Specialist**	• At least Bachelor's Degree in Environmental Sciences / Social Sciences or a related field – Master's Degree in Environmental Sciences / Social Sciences or a related field would be preferred.	• Preferably 08 years of relevant experience
5	**Geotechnical Engineer**	• At least Bachelor's Degree in Civil Engineering or Geological Engineering or related field – Master's Degree Civil Engineering or Geological Engineering or Foundation Engineering or related field would be preferred.	• Preferably 08 years of relevant experience
6	**Gender and Community Mobilization Expert**	• At least Bachelor's Degree in Social Sciences or a related field – Master's degree in relevant field would be preferred.	• Preferably 08 years of relevant experience
7	**Draftsman / AutoCAD Specialist**	• At least Diploma of Associate Engineering or degree in Drafting, Engineering, Architecture, or a related field. Proficiency in AutoCAD and other relevant drafting software.	• Preferably 05 years of relevant experience
8	**Data Processing Officer**	• At least Bachelor's Degree in related field	• Preferably 05 years of relevant experience
9	**Field Inspector Civil**	• At least Diploma of Associate Engineering (Civil) or a related field –	• Preferably 05 years of relevant experience

S/No	Position	Qualifications	Project Related Experience
		Bachelor's degree in Civil Engineering or related field would be preferred.	
10	**Field Inspector Mechanical**	• At least Diploma of Associate Engineering (Mechanical) or a related field – Bachelor's degree in Mechanical Engineering or related field would be preferred.	• Preferably 05 years of relevant experience
11	**Field Inspector Electrical**	• At least Diploma of Associate Engineering (Electrical) or a related field – Bachelor's degree in Electrical Engineering or related field would be preferred.	• Preferably 05 years of relevant experience
12	**Quantity Surveyor**	• At least Diploma of Associate Engineering (Civil) or a related field – Bachelor's degree in Civil Engineering or related field would be preferred.	• Preferably 08 years of relevant experience

Implementation Arrangements

26. **Data, Services and Facilities to be Provided by the Client**

27. The PIU will provide all possible assistance and information as may be reasonably requested by the Consultant to carry out their obligations. This is particularly related to the delivery of the schools' building designs prepared by the EPC Contractor. Designs will be provided in original soft format and PDF files.

28. The Consultant will be completely responsible for all logistic support of its team, including but not limited to local transportation, accommodation, office space, maintenance, water, electricity, telecommunication services, high-band Internet connection, office supplies and consumables and any other related good required to complete the task. The Consultant will supply all necessary computer hardware and software required to deliver the services.

29. **Facilities To Be Provided by The Client**

30. The Client will provide to the Consultant with access to key relevant reports, studies and other documents required to carry out the design review and related documents preparation, including but not limited to the already prepared prototype architectural designs; the initial equipment list including their specifications and the Government's GPS maps if available for the project. The Client will also provide any available data / reports related to environment and social safeguard and related studies.

31. **Facilities To Be Arranged By The Consultant**

32. The Consultant will organize its own office space in **Karachi**, preferably during the design review phase and will be converted to supervision phase, where the Team Leader / Project Manager will be based, as well as office spaces in all six (06) tehsils of District Khairpur. The Consultant should include office requirements for Construction Supervision Phase-II such as office furniture; office hardware; communications equipment; photocopying equipment; fax machines; computers, printers and associated software; air conditioning; costs associated with required office support staff (i.e. accountant, office manager, computer operator, peon, and guards etc.); and hiring of vehicles for field activities. During supervision phase.

33. Depending on the implementation schedule (as indicated above), details of staffing levels will be agreed through the course of the assignment with the PIU.