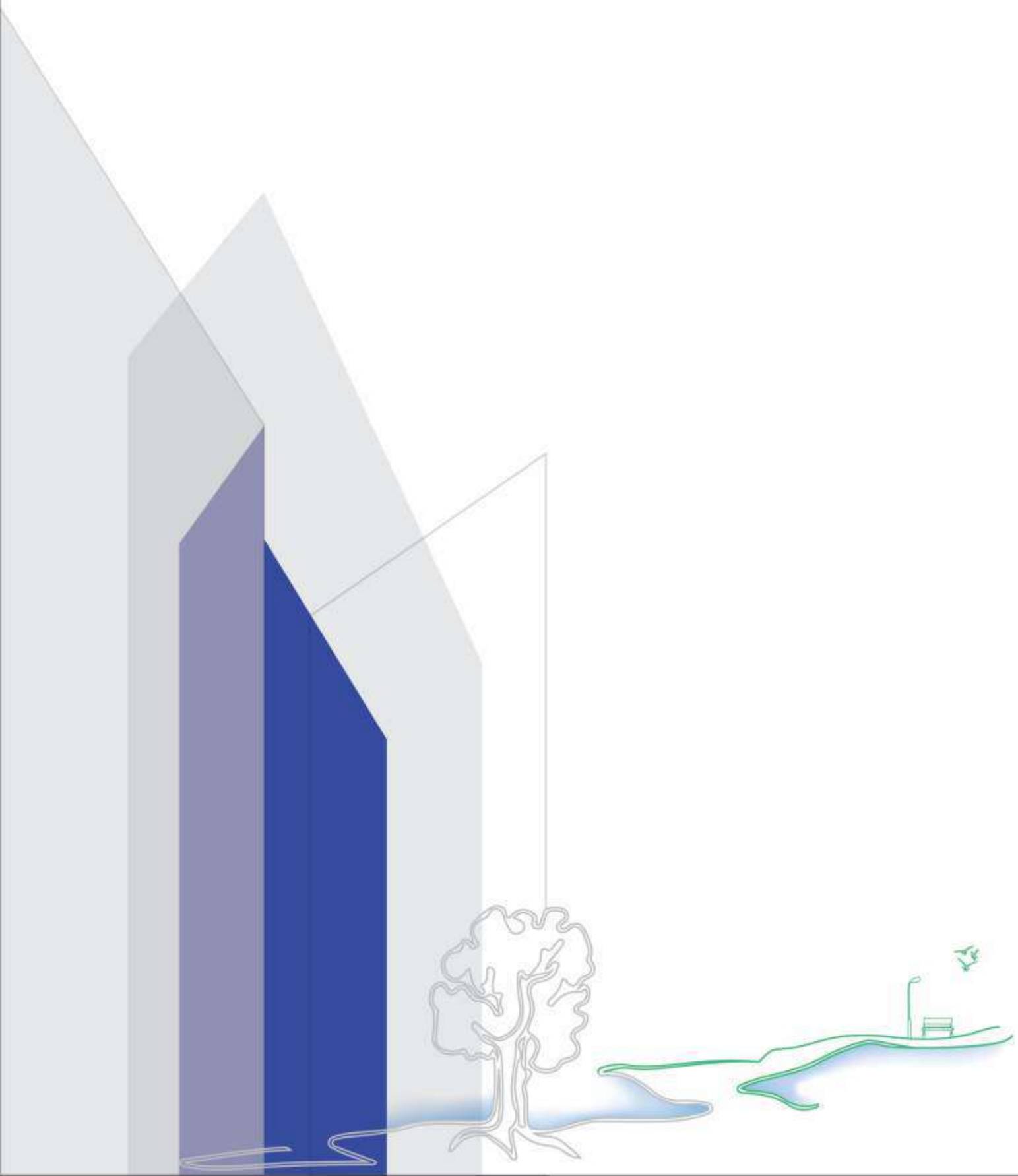
ELMS

Sustainable Environment
Safe Infrastructure



MESSAGE FROM THE CHAIRMAN

As the chairman of the company, I am honored to serve EIMS along with our outstanding leaders and dedicated staffs.

EIMS is celebrating more than 12 years of successful efforts. Despite the remarkable pace of change in the world around us, we have demonstrated our ability to face challenges and remain focused on what we do best — Natural Resources management, Environmental, Climate change & Disaster Management studies, Topographical Survey & Hydrological analysis, Structural Vulnerability and Integrity Assessments, Seismic Analysis and Retrofitting Construction.

At EIMS, we value integrity, hard work, accountability, respect, client satisfaction and personal dedication. These values are embedded within our slogan, 'Safe Infrastructure & Sustainable Environment'.

I trust you will appreciate our services and dedication.

Sincerely,

Ahmadul Hassan, PhD

Environment and Infrastructure Management Solution (EIMS) Limited

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EIMS
Sustainable Environment
Safe Infrastructure

VISION

EIMS envisions safe and sustainable infrastructure across the world as a technical think tank.

VALUES

Our core values are at the heart of our business because they define who we are, how we work, what we believe in, and what we stand for. Our values set out how we act and how we expect to be treated as part of EIMS and provide a sound basis to make decisions.

MISSION

- The innovation of new technologies for creating a safe and sustainable infrastructure.
- Adoption of evolving technologies to act as a leading technical think tank.
- Ensuring quality of service by complying with internationally recognized codes and standards of practices.
- Developing resilient infrastructure by harmonizing technological solutions, societal needs, and environmental safeguard through a participatory approach.

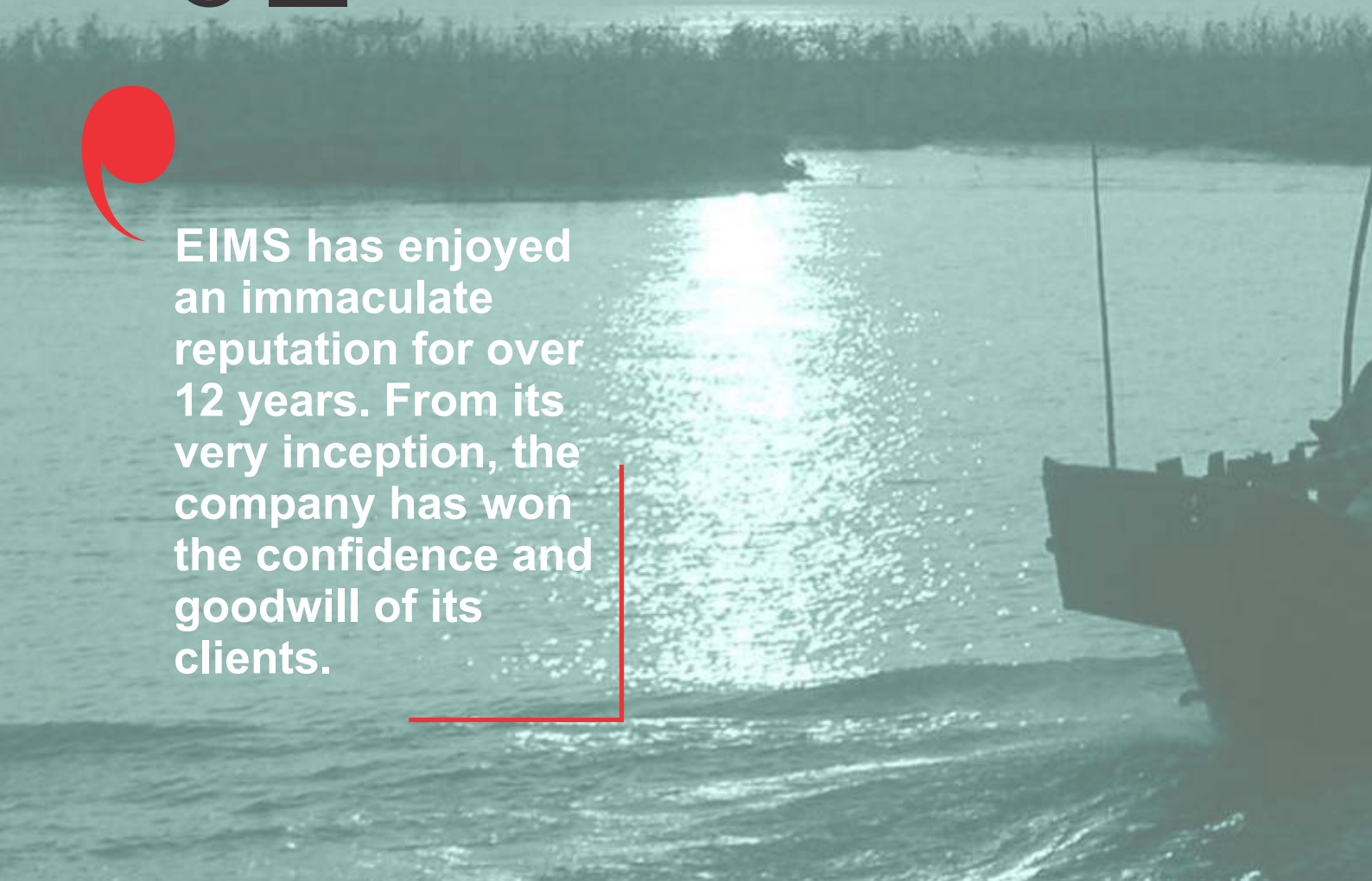
Safe Infrastructure
Sustainable Environment

CONTENTS

COMPANY INTRODUCTION

Environment and Infrastructure Management Solution (EIMS) Limited, a fast-growing multidisciplinary organization, aims to provide solution across a wide spectrum of Natural Resources Management, Environmental/Climate Change & Disaster Management Studies, Structural Engineering, Structural Vulnerability and Integrity Assessments, Retrofitting Design & Construction, Geotechnical Engineering. EIMS started its journey in 2005 and finally was registered as a limited company on 17th October 2011 with the vision “we are for your safety" lead by employees who are determined in providing first-rate services.

From its very inception, the company has won the confidence and goodwill of its clients for more than 10 years with dedicated professionals. During the last decade, EIMS has been working to ensure enabling environmental through EIA/SIA, ESMP, urban planning, disaster risk management through identifying issues, its impacts, possible and realistic mitigation plans in combination of GIS/Remote sensing application on different thematic areas through participatory approach. EIMS also focuses on developing resilient infrastructure by harmonizing state-of-the-art structural engineering, vulnerability assessments, geotechnical engineering and investigations with societal needs and environmental safeguard for both Government and Private sectors. Aimed at creating safe and sustainable infrastructure,



EIMS has enjoyed an immaculate reputation for over 12 years. From its very inception, the company has won the confidence and goodwill of its clients.

EIMS construction division is one of the leading companies in country to perform retrofitting construction works after the "Rana Plaza" for increasing resistance of low-performing structures with safety against vulnerabilities.

EIMS has successfully completed seismic vulnerability assessment of more than 200 buildings, retrofitting works for more than 20 buildings in Dhaka and Chittagong EPZ along with UN office premises. Due to its professional and reliable performances, EIMS has enlisted itself in Bangladesh Economic Zones Authority (BEZA) and Department of Inspection for Factories and Establishments (DIFE), has a Long-term Agreement with UNICEF and WFP and enlisted as Qualified Assessment Firm (QAF) of Alliance for Bangladesh Workers' Safety. EIMS in its lifetime was involved with one of the biggest residential infrastructure development projects in this country. In renewable energy sector, EIMS supports international renewable energy firms through conducting the feasibility study including topographical survey, hydrological survey and GIS analysis. Also in water and sanitation program, EIMS has been working closely with UNICEF and DPHE in rural piped water system design under the Arsenic Safe Union Project, Provision of life-saving WASH services to the Rohingya refugee, and Supporting and Monitoring of Implementation of WASH Services at Host Community, Cox's Bazar since 2017. Besides that EIMS experts giving consultancy services to several other projects of multinational agencies like Social Management Framework (SMF), Environmental Management Framework (EMF) and vulnerability assessment using intense survey and GIS technologies for World Bank. It has also conducted soil investigation, foundation design and feasibility study of Jhilmil Residential Area Apartments project and Risk Sensitive Land use planning and Vulnerability Assessment of Critical structure for RAJUK, Detail Engineering Assessment (DEA) and retrofitting assessment of 10 PTI Buildings in ten different district for LGED and retrofitting design support for Dhaka City Corporation. With the continued support and good will of our customers, and the dedication of our staff who are key to the success of EIMS, we look forward to embrace the challenges of the future with renewed vigor.

ENVIRONMENTAL SERVICES

ENVIRONMENTAL AND SOCIAL MANAGEMENT

Since its founding, EIMS has consistently provided high quality environmental services to a growing list of clients. EIMS is entrusted for its increasingly complex and challenging projects. We provide services with scientifically valid, environmentally sound, technical excellence, highest quality outcomes, and diversity of skills in a timely, cost-effective manner. We also look for the solution to environmental problems and issues, social and health related activities including sustainable development, social development and advancement of women. We have qualified and experienced Environmentalist, Hydrologist, Groundwater- hydrologist, Ecologist, Economist and Sociologist. Few project of EIMS is summarized below:

- **EIA** Environmental Impact Assessment
- **IEA** Initial Environmental Assessment
- **EMF** Environmental Management Framework
- **SVA** Social Vulnerability Assessment
- **ESMP** Environmental & Social Management Plan
- **CCI**

SOCIAL MANAGEMENT FRAMEWORK

EIMS was engaged in the project of Social Management Framework (SMF) of Bangladesh Urban Resilience Project (URP) of the World Bank. The Social Management Framework (SMF) intended to implement the URP in two cities, Dhaka (DNCC, DSCC) and Sylhet (SCC). The SMF was submitted to the World Bank for review and clearance by the designated regional safeguard unit of the bank and formally agreed with the Government of Bangladesh. Following activities have been carried out for the preparation of this framework.

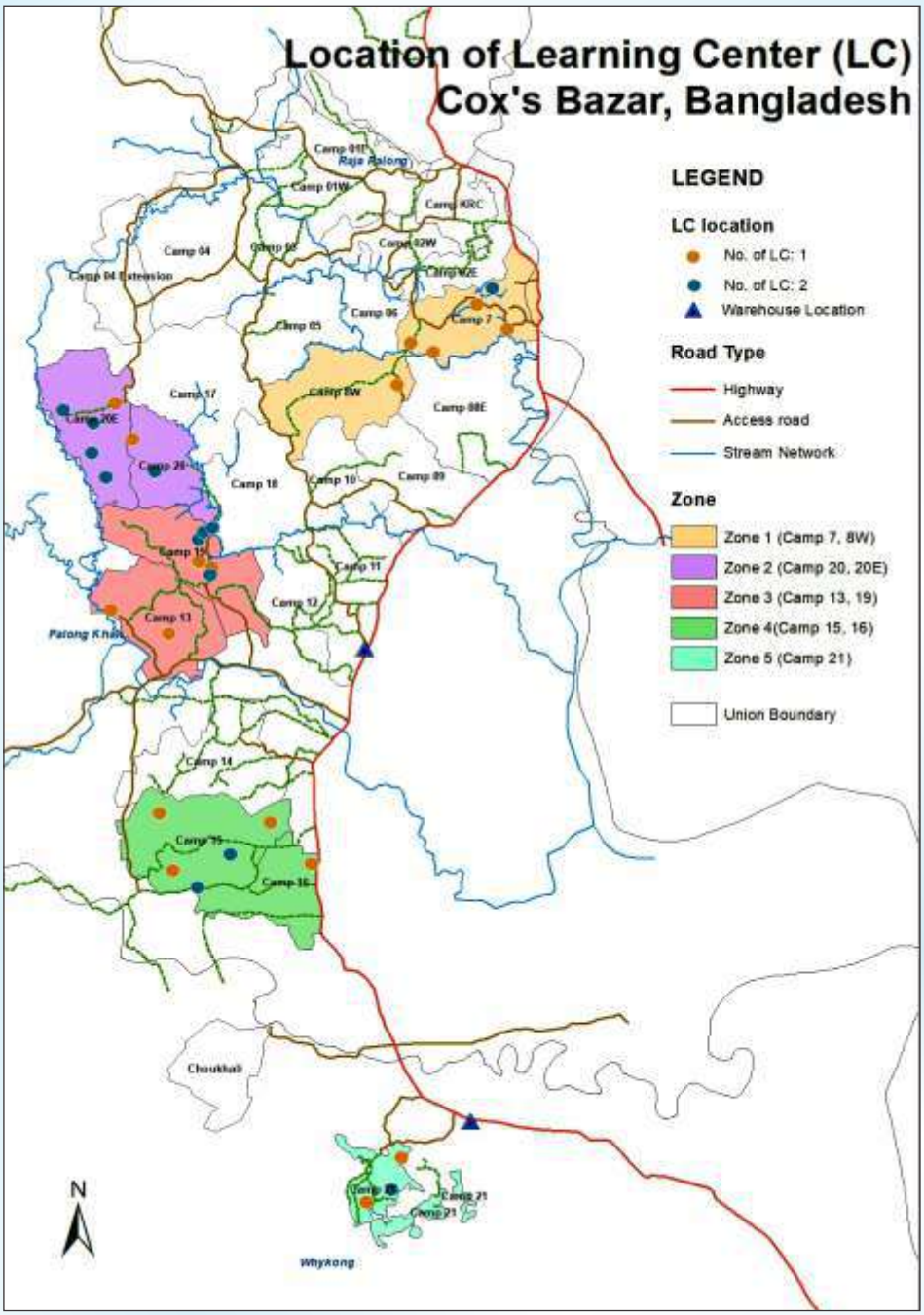
- Stakeholder Analysis.
- Analysis of legal and regulatory framework relevant to the URP
- Identification of Social Issues
- Identification of different social groups
- Making of resettlement policy framework

RENEWABLE ENERGY PROJECT

In renewable energy sector EIMS support international renewable energy firms through conducting the feasibility study of 200/100/50MW solar power plant project with topographical survey, hydrological survey and GIS analysis.

EIMS conducted Environmental & Social Impact Assessment, Soil Investigation, Hydrological Analysis and Topographic Survey for the feasibility study of proposed Ground-mount Photovoltaic Solar Power Plant Project at seven different locations in Bangladesh. EIMS also identified measures to reduce risks from floods, DEM, Contour Map, Volume calculation and Soil Investigation to explore soil texture bearing capacity and sharing strength (the total borehole is 150), etc. for the seven sites. Besides EIMS produced an environmental impact assessment report based on Department of Environmental (DOE) guidelines and local ecological methods of social conditions.

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP) FOR CONSTRUCTION OF LEARNING CENTERS (LC) IN ROHINGYA CAMP, COX'S BAZAR, BANGLADESH



The humanitarian situation for Rohingya refugees in Bangladesh has become more severe with 1.2 million of which around 60% are children. To address the issues of humanitarian education Sector UNICEF Bangladesh is going to improve these temporary structures to a more durable and semi-permanent structure and has undertaken a project of upgradation by constructing 150 new learning centers at different phases where a ESMP guidelines and monitoring plan is required to ensure environmental sustainability & social safety standards. In this regard EIMS has been engaged to conduct a study on Environment and Social Management Plan (ESMP) to make it more specific with the field condition of refugee camps for construction of the new learning centers.

EIMS developed a framework document that summarizes all environmental and social measures and checks the environmental and safety aspects of the learning centers where all the Rohingya children will be facilitated through education. A detailed field investigation has been conducted in all five zones covering eight learning centers as sample representing these five different camps and also two warehouse locations to understand the existing environmental state, socio economic condition, construction & safety, hydrological and climatic condition in combination of reviewing the existing law, policies and regulatory frameworks.

Environmental monitoring and testing have been done to understand the baseline condition and what will be the possible changes by interventions to the environment by a systematic sampling of air, water, noise, and traffic condition. Based on the field observations and different analytical data, different issues and its possible impacts related to implication of learning on different sectors like socio economic aspect, surrounding environment, hydrology & climate and construction and safety has been identified. Total nine (09) possible issues associated to socio economic aspect, nine (09) issues associated with environment, five (05) issues associated with hydrology & climate and eight (08) issues associated with construction and safety are identified and described.

After identifying these issues and its impacts, possible and realistic mitigation plans are suggested through a procedure with proper information. Based on the suggested mitigation plans, a detailed monitoring plans has also been developed to execute the ESMP during the construction phase to mitigate the adverse impact. EIMS also developed different report along with this study like Code of conduct, Grievance mechanism, Incident report and Land Acquisition.

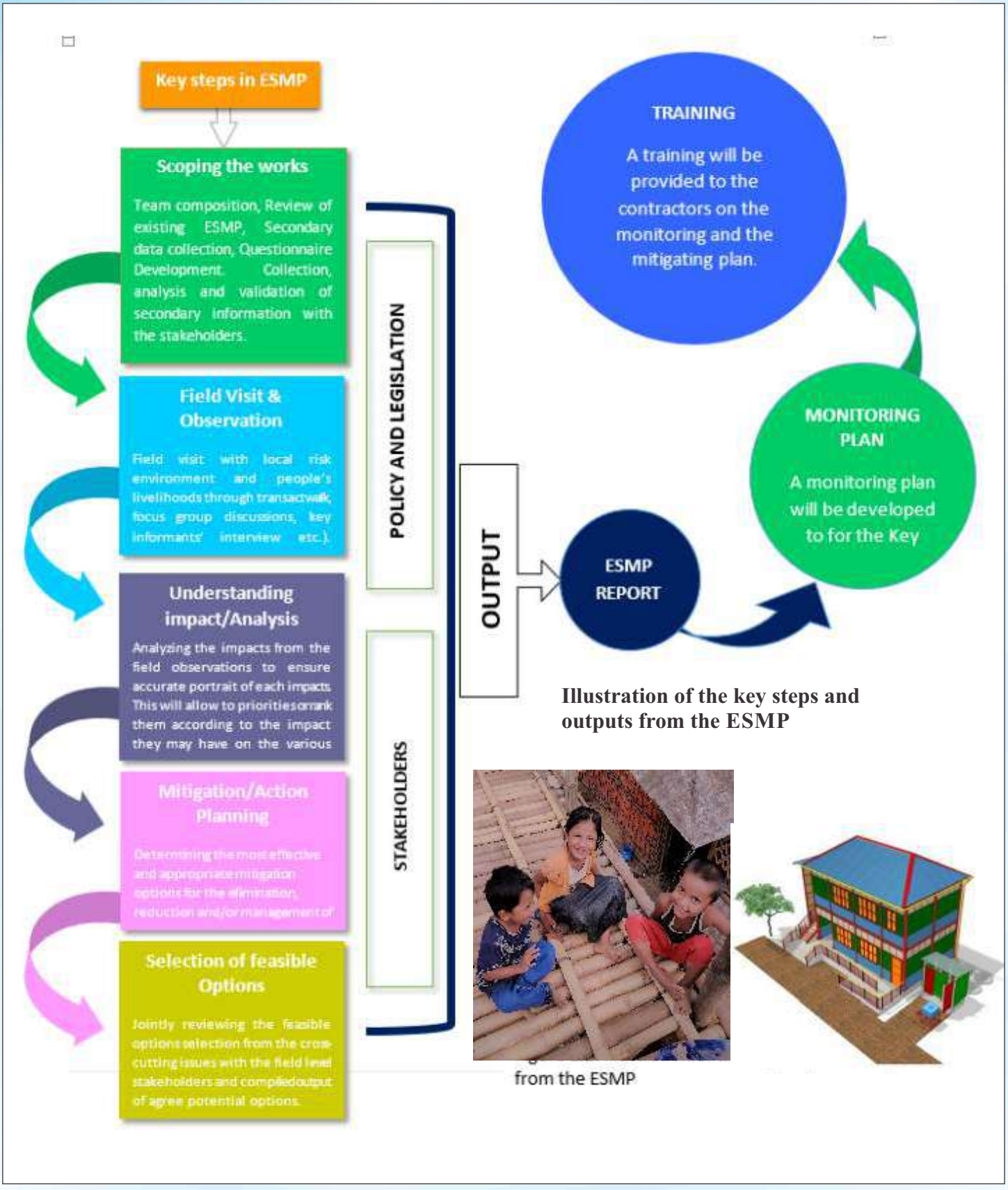


Illustration of the key steps and outputs from the ESMP

from the ESMP

Basin Modeling of The Brahmaputra River System in Bangladesh

This project was taken up by the World Bank's South Asia Water Initiative (SAWI) as part of its multi-country effort aimed at increasing regional cooperation in the management of the Himalayan river systems to deliver sustainable, fair, and inclusive development and climate resilience. It follows SAWI's principle of the Brahmaputra Focus Area (FA) Strategy, which is that a shared vision of transboundary water resources development and management in the basin could be achieved when countries have a greater understanding of the Brahmaputra, and subsequently realize the potential economic benefits of transboundary cooperation.

The project's goal is to support the strategic and basin-wide management of the basin. It aims to build capacity to better understand the dynamics of the basin, enabling prioritization of development alternatives, and identify models and tools to evaluate their impacts.

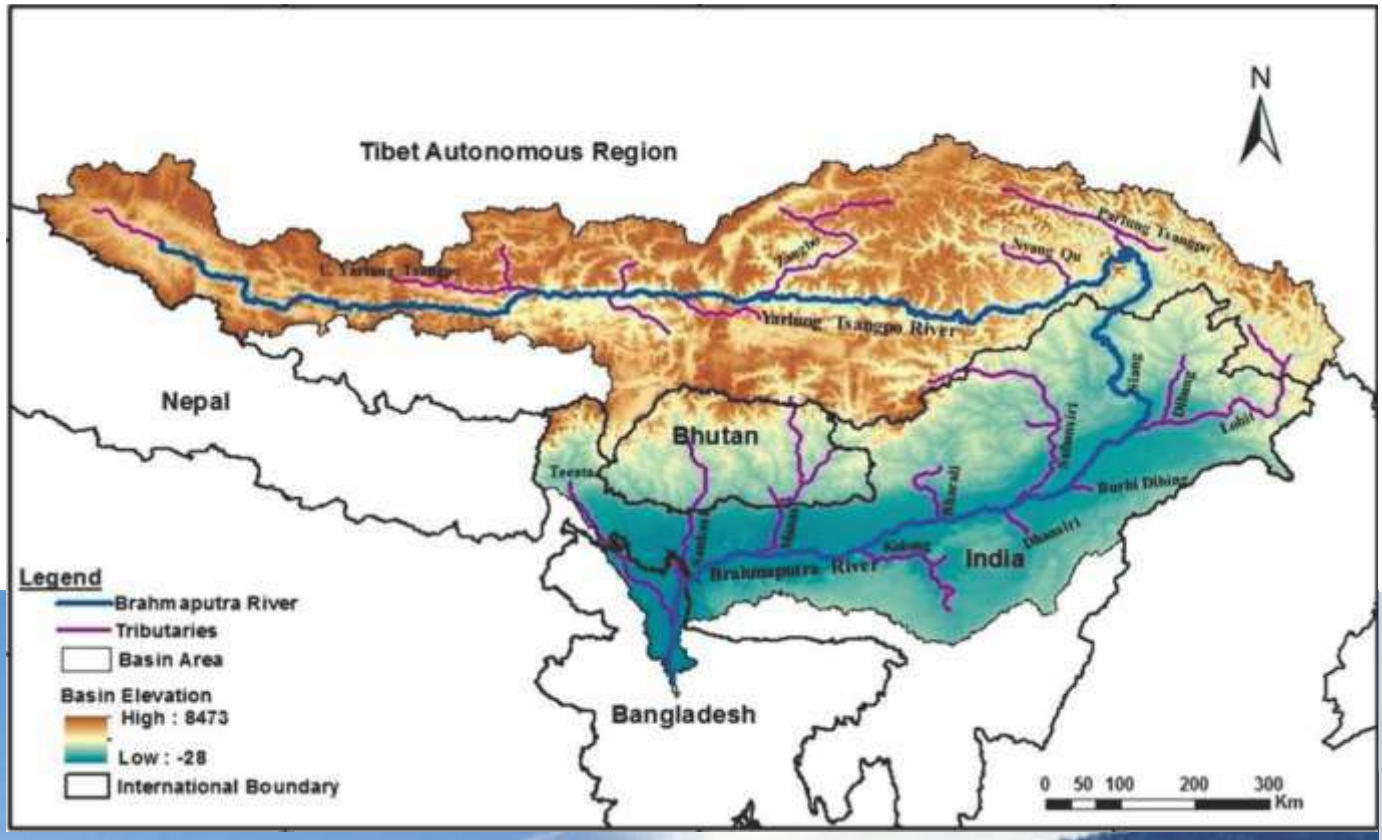
This will be achieved by:

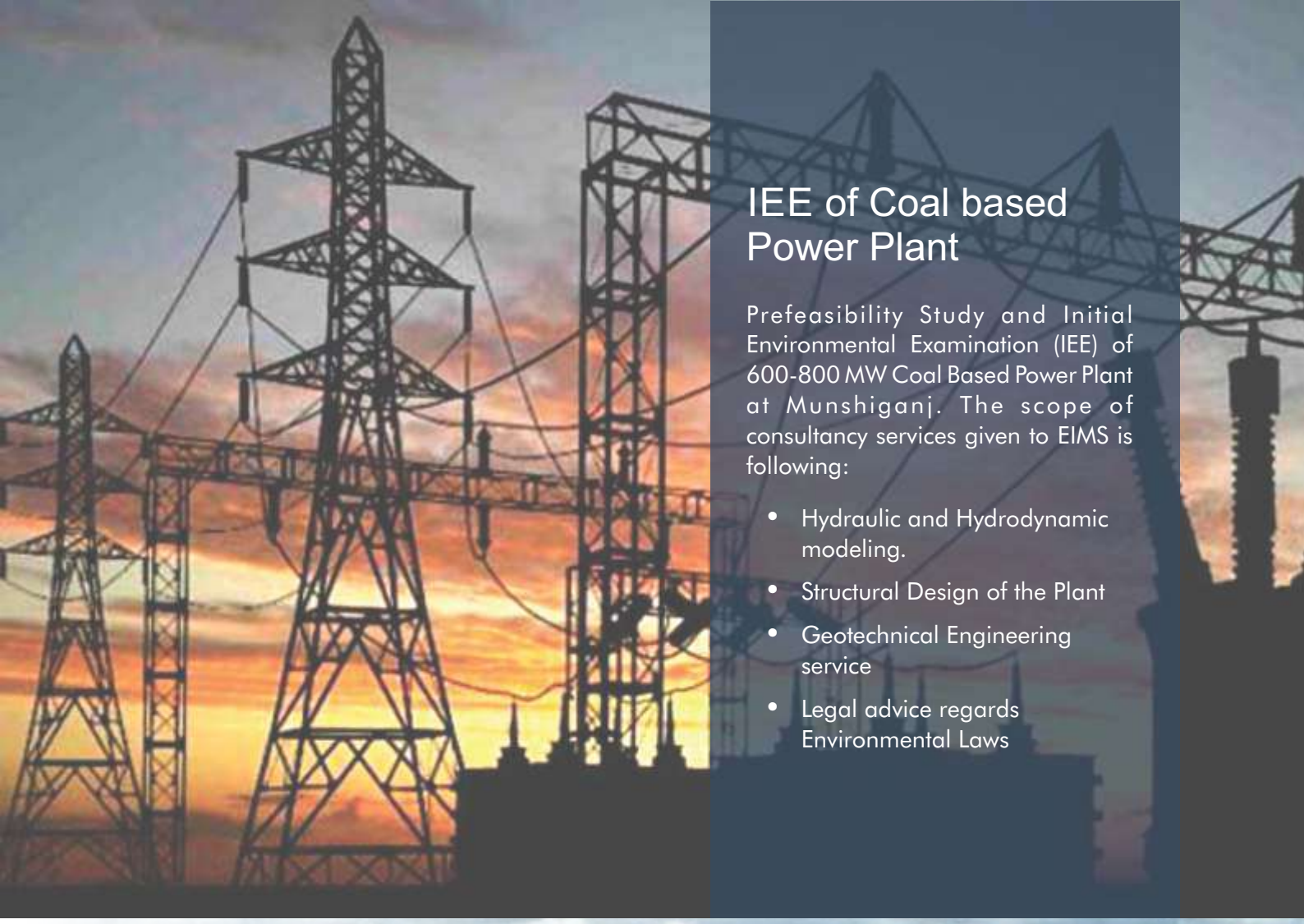
(i) Inventory of the knowledge base for the entire Brahmaputra river basin to assess the water resources and support strategic planning

(ii) Establishing a multi-stakeholder consultation process to identify and prioritize basin development issues

(iii) Identifying and assessing alternative basin models and analytical tools to analyze the development issues and the associated impacts

(iv) Building capacity through training and sharing of the knowledge inventory, and collaborative development of basin modeling rationale, plans and design, including easy and wide access to the analyses, model results, reporting, and supporting documentation.


N
Tibet Autonomous Region
Yarlung Tsangpo River
Nepal
Bhutan
India
Bangladesh
Brahmaputra River
Legend
Brahmaputra River
Tributaries
Basin Area
Basin Elevation
High : 8473
Low : -28
International Boundary
0 50 100 200 300
Km



IEE of Coal based Power Plant

Prefeasibility Study and Initial Environmental Examination (IEE) of 600-800 MW Coal Based Power Plant at Munshiganj. The scope of consultancy services given to EIMS is following:

- Hydraulic and Hydrodynamic modeling.
- Structural Design of the Plant
- Geotechnical Engineering service
- Legal advice regards Environmental Laws

ENVIRONMENTAL MANAGEMENT FRAMEWORK

This project has been awarded to EIMS by the World Bank in which an environmental framework has been adopted to ensure screening and assessing of all the activities for the environmental issues and to prepare site-specific Environmental Management Plan (EMP). Initially, the project was intended for the Dhaka city area. The objective of the EMF is to ensure the activities of the proposed operation in the report. This project is intended for the Bangladesh Urban Earthquake Resilience Project (URP) of the World Bank. This project seeks to create an enabling environment for coordinated, locally managed Disaster Risk Management (DRM). The following steps have been carried out for the preparation of this framework.

- Review of Existing Document.
- Field Visit and Consultation
- Drafting the Framework
- Bengali Translation of the Framework

OPEN CITIES DHAKA PROJECT

EIMS has been contracted by the World Bank to participate in the Open Cities Dhaka Project by assessing the vulnerability of the buildings in the old part of Dhaka. Through this project, EIMS has surveyed over 8,500 buildings in Old Dhaka in three wards (Ward 67, 68, and 69) and collected in-depth critical infrastructural information such as the number of stories, construction type, and vertical irregularity which can be used to inform scientific risk modeling and vulnerability assessment of the building. From the surveyed buildings, it was found that 8.3% of the buildings are soft storied and 26.6% of the buildings have vertical irregularity, both of which are very important factors in seismic modeling and make the structure more vulnerable to earthquake.

EIMS's extensive survey also identified buildings that are important to Bangladesh's cultural heritage, possible evacuation centers in case of emergency. The survey also examined the existing water and sanitation network of old Dhaka. The following table shows building conditions in these three wards identified using the Rapid Visual Screening (RVS) method.

Table showing building conditions

Visible Physical Condition	Total No. of Buildings	Poor (%)	Average (%)	Good (%)
Ward 67	2027	21	56	20
Ward 68	3018	21	58	19
Ward 69	3496	28	51	18

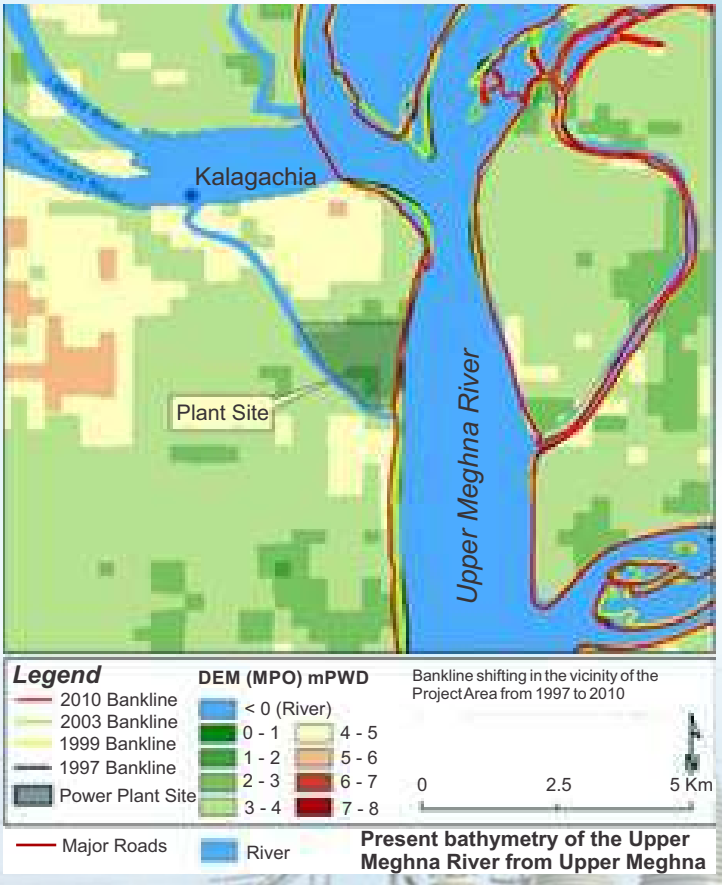
INNOVATING FOR OPEN CITIES

HYDRO-MORPHOLOGICAL STUDY FOR THE PROPOSED MUNSHIGANJ COAL FIRED POWER PLANT

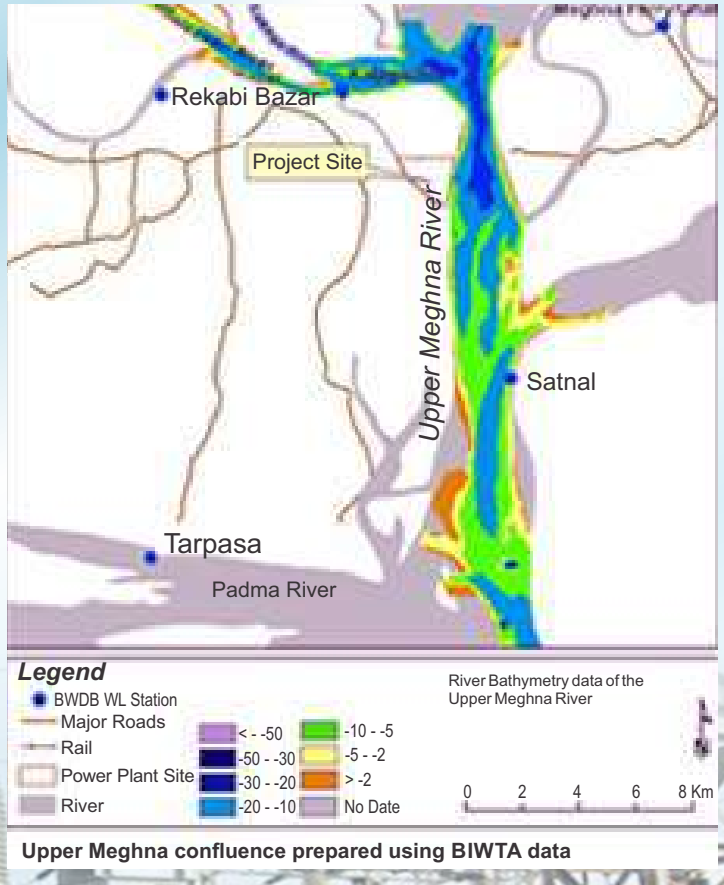
EIMS was contracted to carry out a hydro-morphological study for the proposed Munshiganj coal-fired power plant located immediately downstream of the confluence of Meghna-Dhaleswari River and at the right bank of the Upper Meghna River. The proposed site location was Char Mosura and Char Ramzan Begh in Munshiganj Sadar and Gazaria Upazila of Munshiganj district. The proposed power plant was to produce 600-800 MW of electricity. Before proceeding with the detailed engineering design of such a large power plant, a hydro-meteorological, hydrological, hydro-geological, and morphological study was needed to demonstrate the feasibility of the project site.

The study involved a hydrological study of the rivers in the vicinity of the proposed power plant site to investigate the hydrodynamic characteristics such as water level, discharge, flooding, etc., and a morphological study to assess the sedimentation potential, erosion deposition pattern, bank erosion and stability, planform change and navigability of the rivers in and around the project site.

Relevant hydrometric, bathymetric, topographic, meteorological, sediment, and satellite image data were collected from government and non-government agencies such as BWDB, BIWTA, IWM, CEGIS, IWFM, and then processed and analyzed. A one-dimensional hydrodynamic model was developed in HEC-RAS modeling software to investigate the hydrodynamic characteristics (e.g. water level, discharge, and velocity, etc.) of the Upper Meghna River in the vicinity of the plant site. In addition, a conveyance analysis of the Upper Meghna River at the project site was also carried out using the model's cross-section database. The analyses included the extreme value analysis of water level to find out the highest water level for 100 years return period, flood level and a maximum flow of water for average, 1 in 5, 10, 20 and 100 years return period (equivalent to 43, 20, 10, 5 and 1% frequency, respectively), seasonal water availability, etc. A water level-discharge curve (rating curve) was established for the Upper Meghna River at the proposed site and the consistency and reliability of the water supply from the intake point, monthly minimum, and maximum water level, etc., were examined.



Present bathymetry of the Upper Meghna River from Upper Meghna



Upper Meghna confluence prepared using BIWTA data

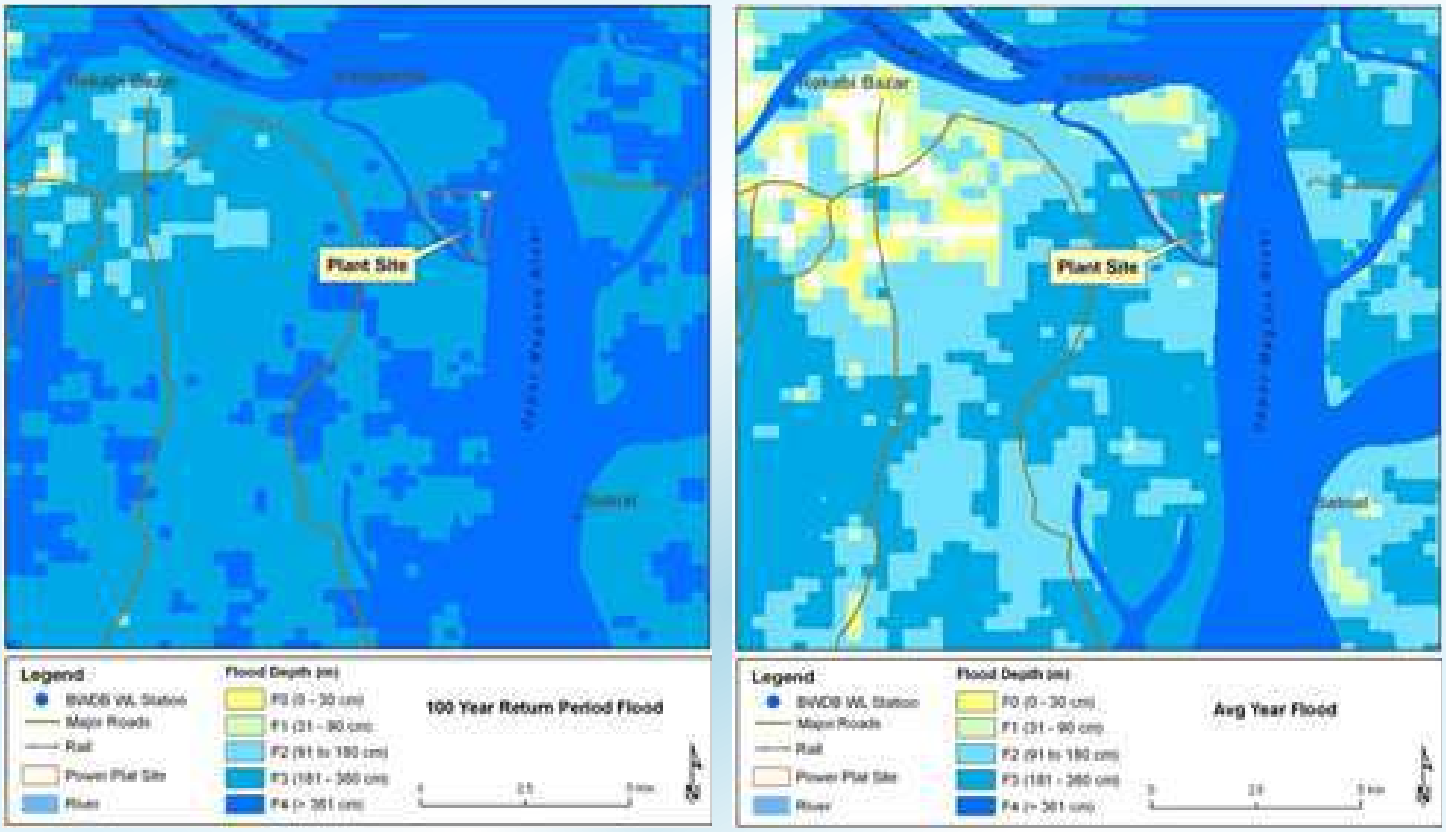
PROVISION OF LIFE-SAVING WASH SERVICE TO THE ROHINGYA REFUGEE POPULATION IN UKHIA AND TEKNAF UPAZILA, COX'S BAZAR DISTRICT.

The main purpose of the project is the monitoring and reporting of UNICEF's WASH emergency response activities and result at Rohingya refugee camps in Ukhia & Teknaf Upazila under Cox'sbazar district.

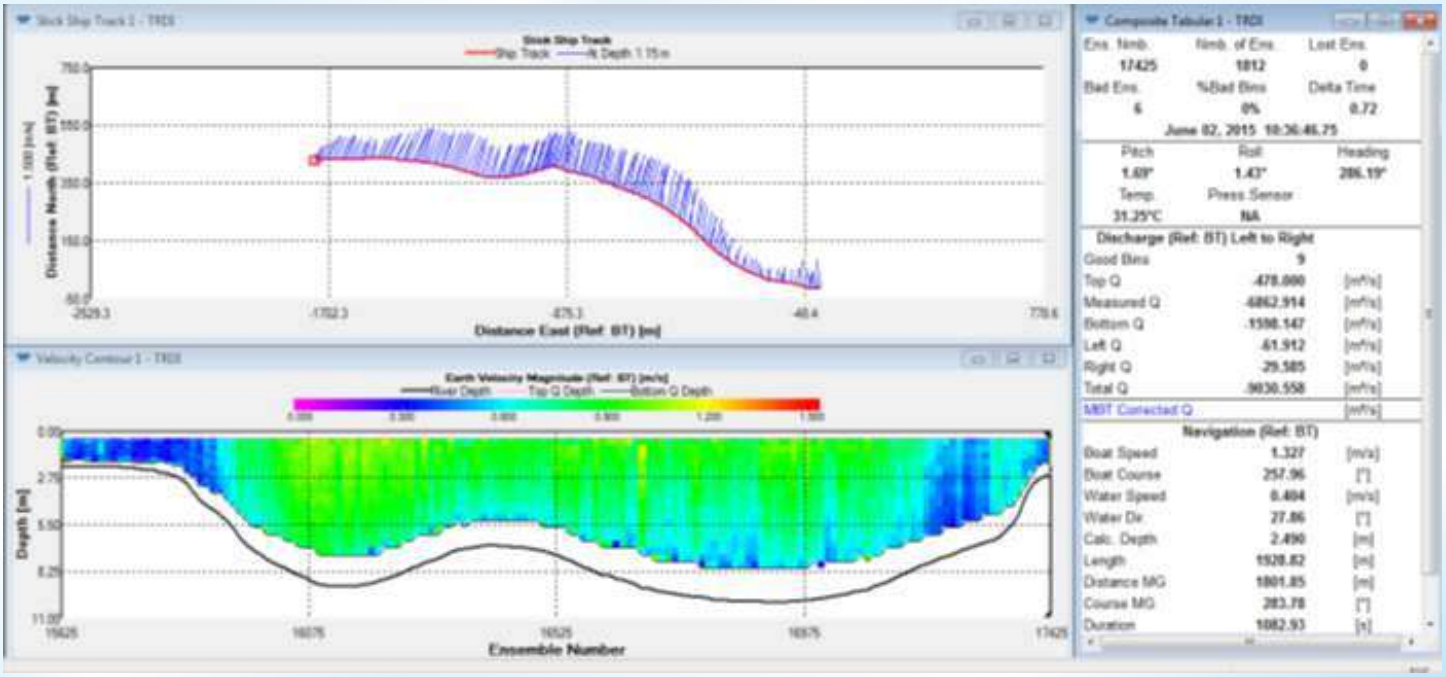
EIMS design appropriate and effective Monitoring Plan to follow up on the implementation of UNICEF's response in the WASH sector. The WASH infrastructures site was selected through a proper site assessment considering the risks of landslides, drainage network, ground conditions and ease of access. The team performs daily field visits to monitor the construction of UNICEF supported WASH infrastructure and services, including provision of water, water quality construction of water points, latrines, bathing units, fecal sludge management sites. The team also inspect the progress, quality of materials and adherence to agreed designs, and agreed on location, Prepare defects lists and follow up to ensure that all defects listed are corrected within the agreed time to an acceptable standard. Monitor functionality and status of latrines and bathing units, specifying any remedial works required. Analysis of WASH-related household data and develop and submit a report on a monthly basis. Data collection are done through online KOBO format by using Tab. Develop an analytical report on a monthly basis for WASH infrastructure and services from the data collected by field monitors.

HYDRO-MORPHOLOGICAL INVESTIGATION FOR THE FEASIBILITY STUDY OF RPCL 1320 MW POWER PLANT IN KHEPUPARA

Study the tidal discharge, sediment load, and river bathymetry of both rivers for hydrological and morphological modeling. The study identifies the stable bank and flow regime for navigation. And propose a stable feasible jetty location with design parameters and design 0.5 km river protection work. Find snapshots of the work.



Flood maps prepared from model water level data Digital Elevation Model (DEM) (a & b);



Snapshots from the project (Hydro-morphological investigation for the feasibility study of RPCL 1320 MW Power Plant in Khepupara)

SUPPORTING AND MONITORING OF IMPLEMENTATION OF WASH SERVICES AT HOST COMMUNITY, COX'S BAZAR.

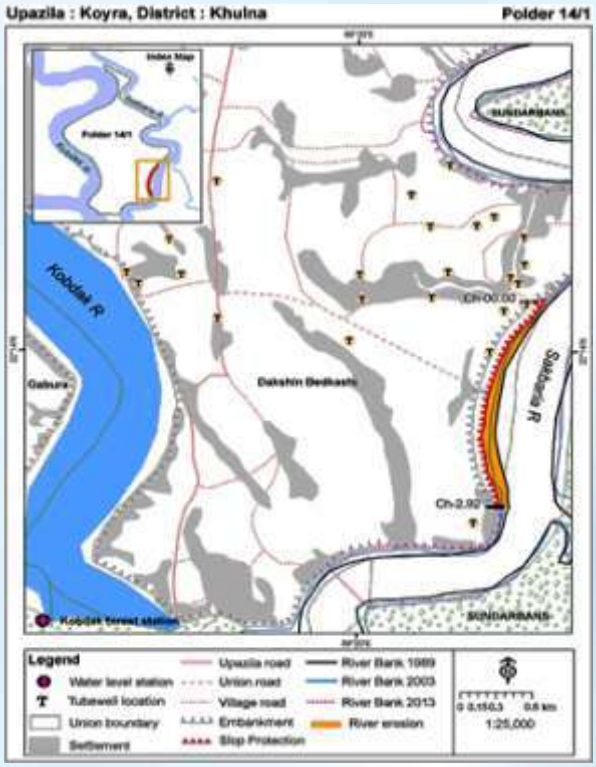
The main objectives of the assignment are to monitor and report the implementation of UNICEF WASH activities and results at the host community and ensure WASH related visibilities at both camps and host communities under Cox's Bazar district.

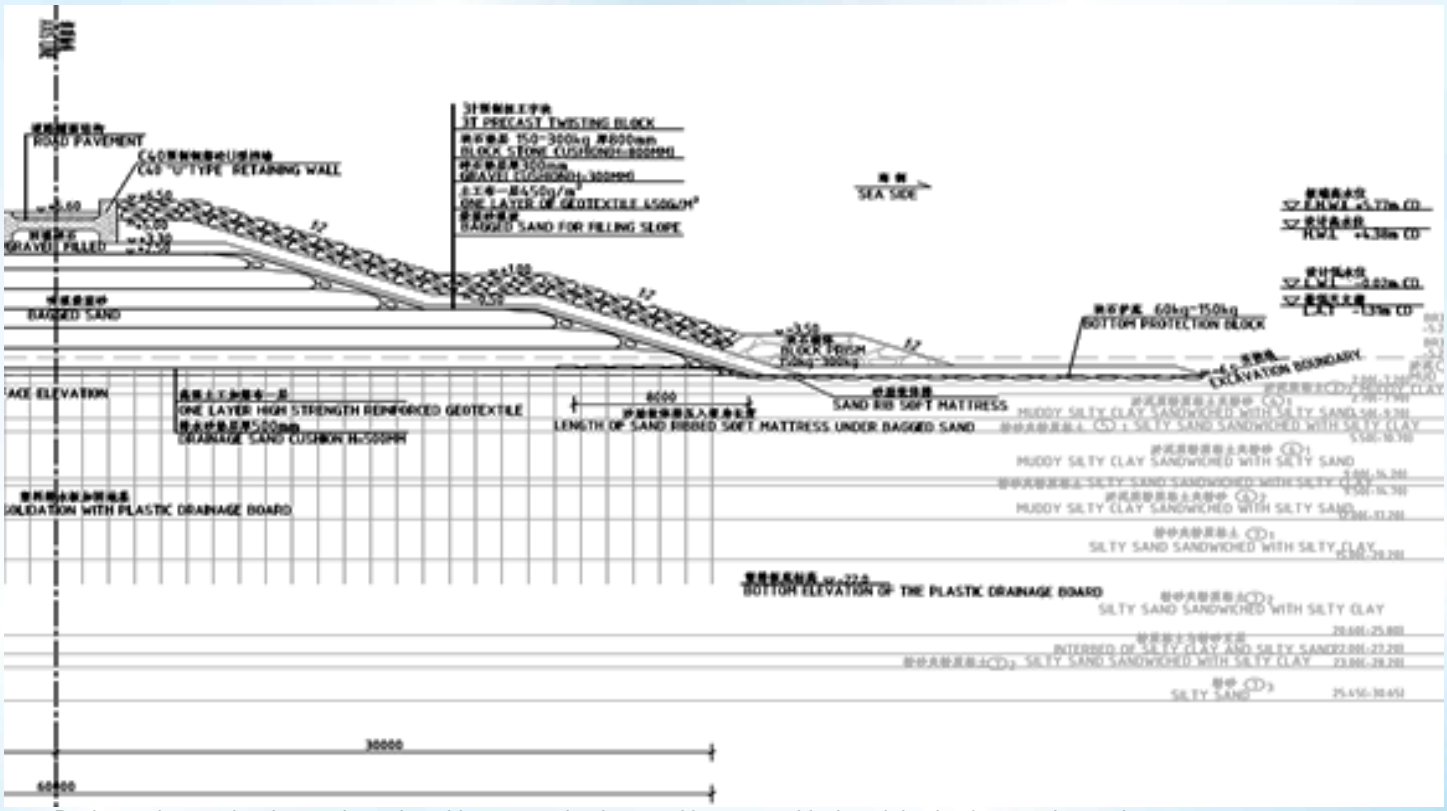
- Oversee the planning and coordination with implementing partners to ensure that action is proceeding as per schedule.
- Conduct regular site visits to all production centers for slabs and rings for latrines to inspect the progress of works, materials quality, and production compliance with design.
- Conduct daily field visits to monitor the construction of UNICEF supported WASH infrastructure to inspect the progress, quality of materials, and adherence to agreed designs and agreed on location.
- Carry out visits to households to assess their access and satisfaction with established facilities
- Meet UNICEF focal person weekly/bi-weekly to review progress, challenges, and way forward.
- Support and ensure WASH-related visibilities at both camps and host communities.
- Support UNICEF's CATS, Host Community PD & Sanitation Marketing project documentation, to prepare online all UNICEF KOBO documentation, etc.
- Ensure people's satisfaction in hygiene materials use.
- Ensure COVID-19 awareness messages at the household level.
- Monitor hand washing device, awareness miking for COVID-19, distribute leaflet, etc.
- Submit comprehensive report weekly/monthly/quarterly/six monthly/yearly capturing progress, challenges, cases, and relevant knowledge created through implementation.

DESIGN AND SUPERVISE THE CONSTRUCTION OF EMBANKMENT FOR PROTECTION FROM TIDAL FLOOD AND RIVERBANK EROSION POLDER 14/1 IN KOYRA UPAZILA OF KHULNA DISTRICT

Dr. Hassan, as an individual consultant of UNDP, design and supervise the construction of embankment for protection from tidal flood and riverbank erosion Polder 14/1 in Koyra Upazila of Khulna District. Koyra is surrounding by the estuarian river of Bay of Bengal and people are at risk from tidal flooding, river erosion, cyclone, and tidal surge.

UNDP with financial assistance from the Netherland government to construct river protection work - embankment with erosion protection.





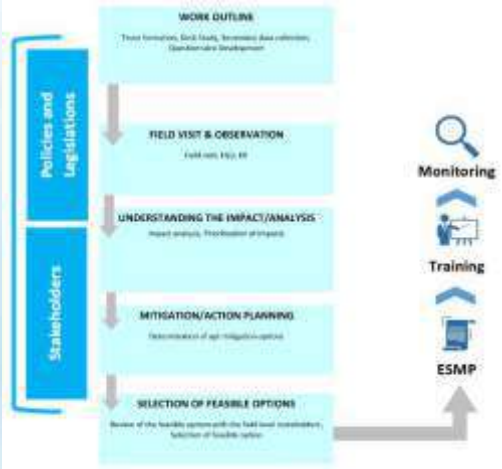
Design and supervise the erosion vulnerable area, embankment with concrete block and riverbank protection works.

PREPARATION OF ENVIRONMENT AND SOCIAL MANAGEMENT PLAN (ESMP) FOR WASH FIRE RESPONSE PROJECT IN ROHINGYA REFUGEE CAMPS 8E AND 8W IN UKHIYA UPAZILA - COX'S BAZAR, BANGLADESH.

EIMS has carried out Environment and Social Management Plan (ESMP) in the camps 8E and 8W in Cox Bazar district for UNICEF funded Fire Response WASH projects. Which are located in the mega refugee camp area in Ukhia Upazila, near the Teknaf reserved forest area, an ecologically enriched and hilly region. The purpose of this assignment is to develop an Environment and Social Management Plan (ESMP), conduct training and provide monitoring services for fire response WASH facilities construction activities in Rohingya refugee camps.

EIMS led many actions but not limited to the following activities to develop the ESMP:

- Identify and assess the Environmental and Social Impacts of the project through field visits and secondary data review.
- Analysis of specific environmental components (Hydro-met, air, water quality, etc.) from literature review and secondary sources.
- Assess water facilities for contamination and identify mitigation measures to avoid contamination of drinking water.
- Obtain people's perceptions of the project.
- Develop of a detailed ESMP, that shall provide proper prevention and/or mitigation measures and depict responsibilities for the impacts identified. Define a clear incident and accident reporting mechanism
- Update the Occupational Health and Safety plan, Grievance Mechanism for communities and workers, Incident reporting form, the Code of Conduct, monitoring checklist/guidelines, site inspection etc.
- EIMS also deliver two days training session to UNICEF WASH team and implementing partner staff for the project before commencement of the full-scale construction activities.
- For conducting the follow-up and monitoring, EIMS established the guideline and checklist for monthly field visits, onsite monitoring reports for UNICEF.

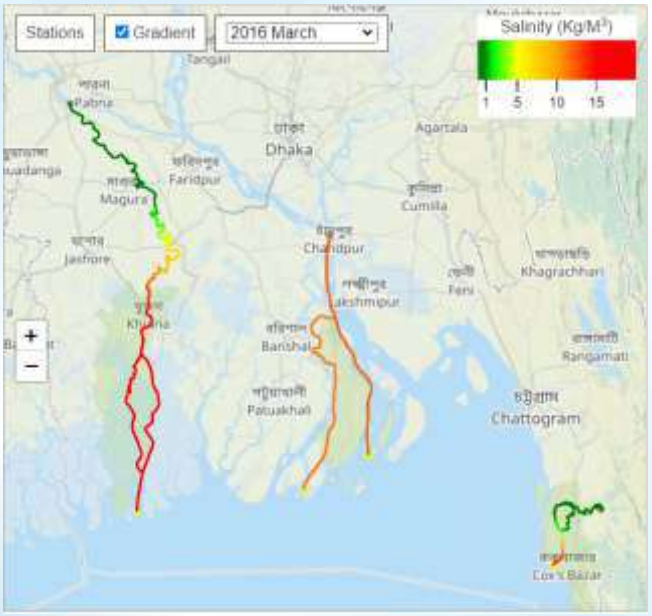


"DEVELOPMENT OF HYDROLOGICAL SERVICES PRODUCTS" BWDB –C15, COMPONENT- B, BWCSRP, FUNDED BY WORLD BANK

Salinity Intrusion Prediction Model

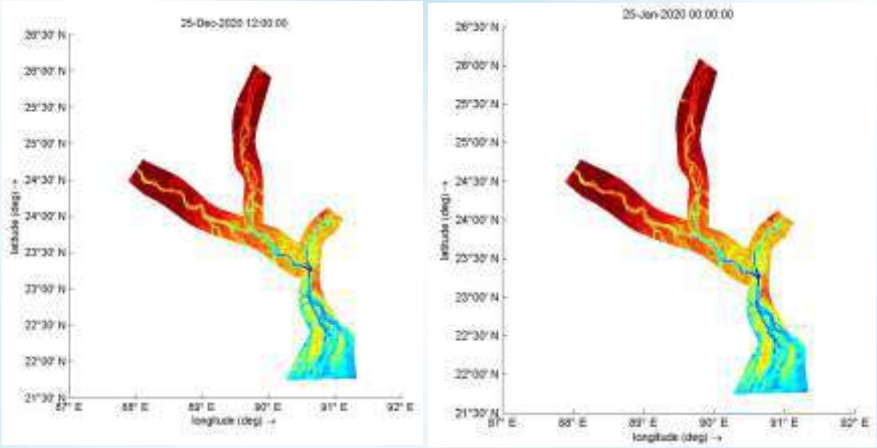
EIMS Ltd is actively engaged in the development of the salinity intrusion prediction model for coastal districts of Bangladesh. This model utilizes mathematical simulation to predict surface water salinity intrusion and surface-water groundwater salinity interfaces. Through analysis of crucial data, including discharge, salinity, water levels, and groundwater quality, EIMS Ltd provides valuable insights for risk assessments, vulnerability mapping, and comprehensive hazard assessments.

The model actively contributes to enhancing the understanding of salinity hazards, facilitating the development of impact scenarios, and supporting informed decision-making processes for sustainable water resource management.



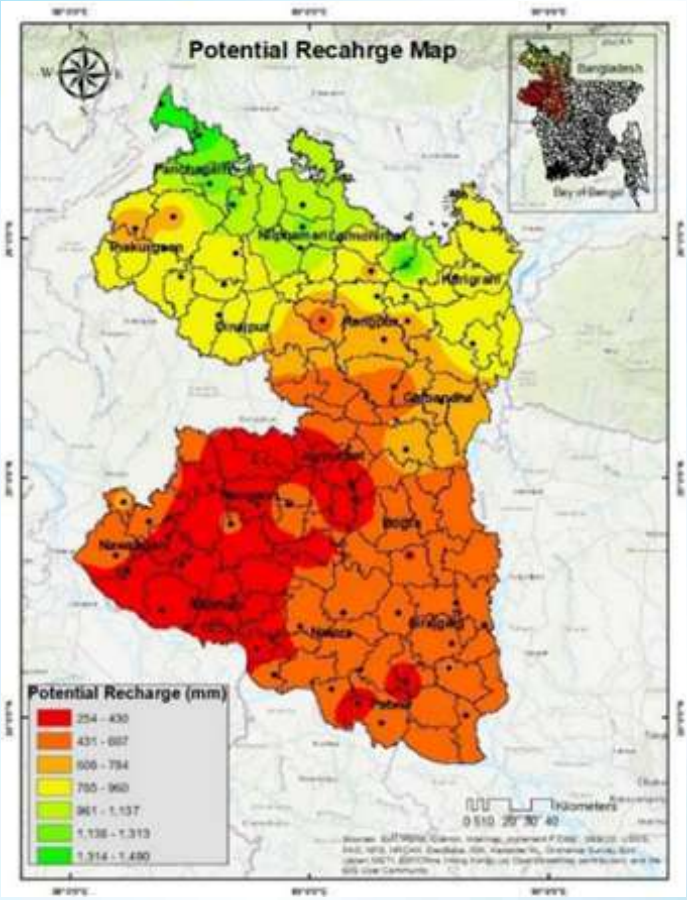
Sediment Transport and Morphology Model

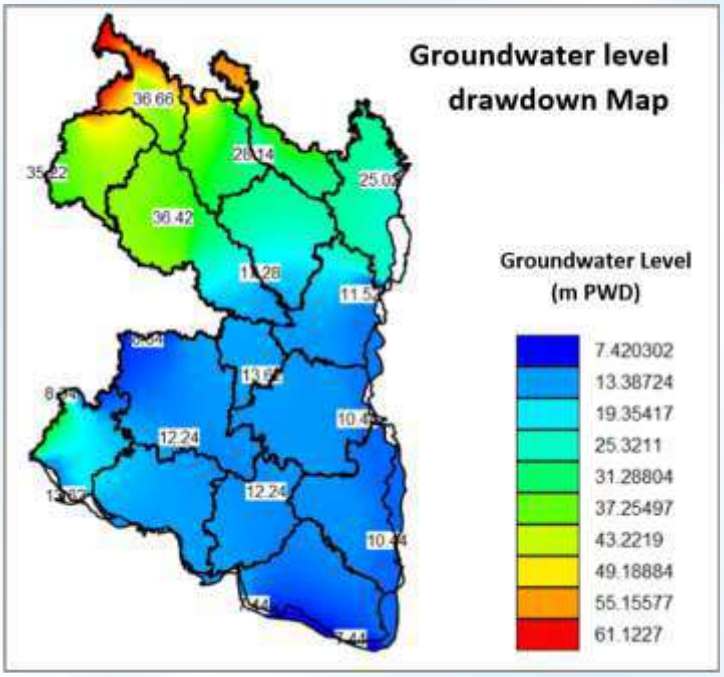
EIMS Ltd specializes in morphological modeling and sediment transport for major rivers of Bangladesh. The company uses the Delft3D software to create a numerical model that can predict yearly morphological changes and sediment movement. The numerical model is used to reproduce the bathymetric evolution over time and the associated sediment budget. EIMS conducts vulnerability assessments, predicts riverbank erosion, bed level changes, and sediment transport, providing valuable insights for decision-making and effective river management strategies



Groundwater Assessment Model

EIMS Ltd has developed a groundwater assessment model for the North-West region of Bangladesh, offering advanced solution to evaluate and predict groundwater resources by incorporating vital data inputs such as groundwater levels, lithology, river water levels, rainfall, and evapotranspiration. Utilizing the widely recognized software MODFLOW, the model generates seasonal groundwater drawdown maps. By leveraging MODFLOW, EIMS Ltd evaluates ground-water availability, estimates aquifer recharge, and provides 7-day lead time forecasts for groundwater levels. The company also provides customized Hazard and Vulnerability maps for groundwater, empowering decision-makers to identify risks and implement effective mitigation strategies.



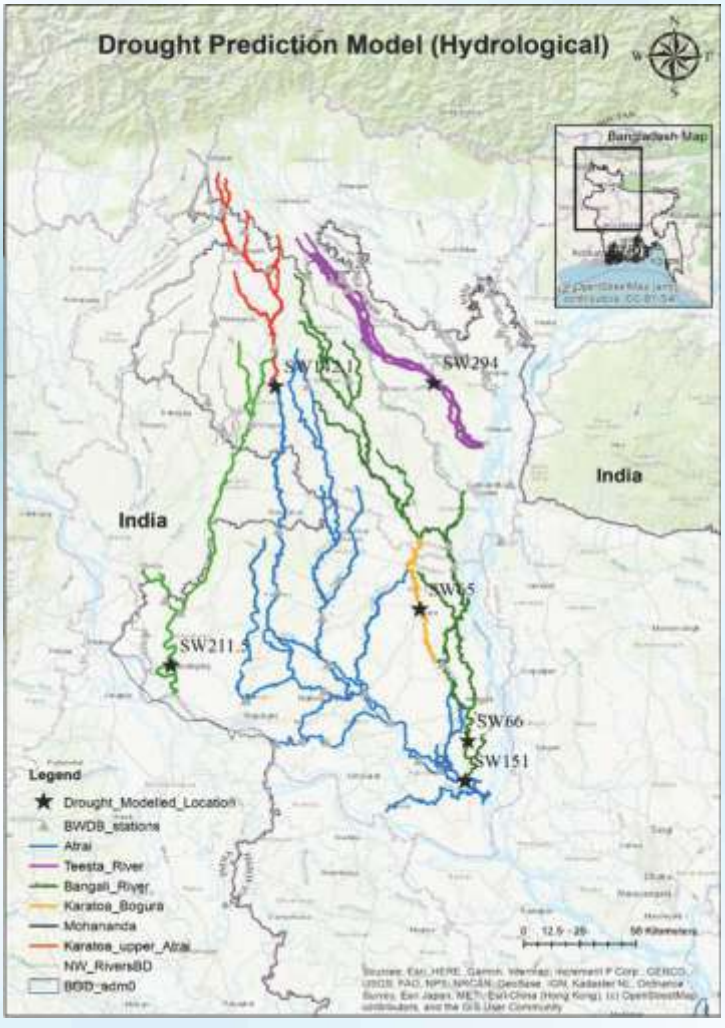


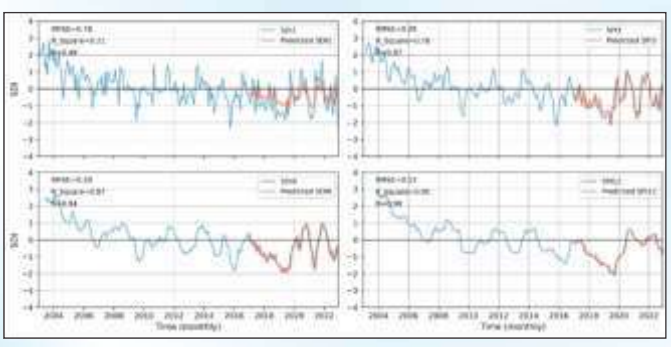
Drought Prediction Model

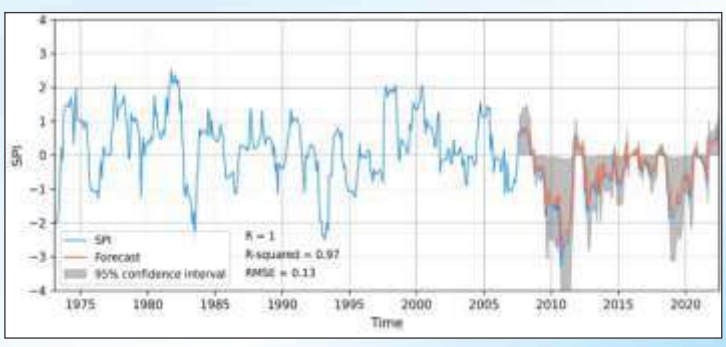
EIMS Ltd has developed a Drought Prediction Model for the North-West region of Bangladesh. This model incorporates meteorological incorporates meteorological, hydrological, and agricultural drought indices based on data such as river levels, discharge, temperature, rainfall, and evapotranspiration. The model generates seasonal drought prediction

maps and provides hazard and vulnerability assessments at the district level. Utilizing ARIMA, ELM, and Random Forest methods, EIMS Ltd delivers accurate and actionable insights for

effective drought risk management. Extreme Learning Machines (ELM) model has been used to predict drought events. Calibration period, 1972-2008 and prediction and validation for 2008-2022.





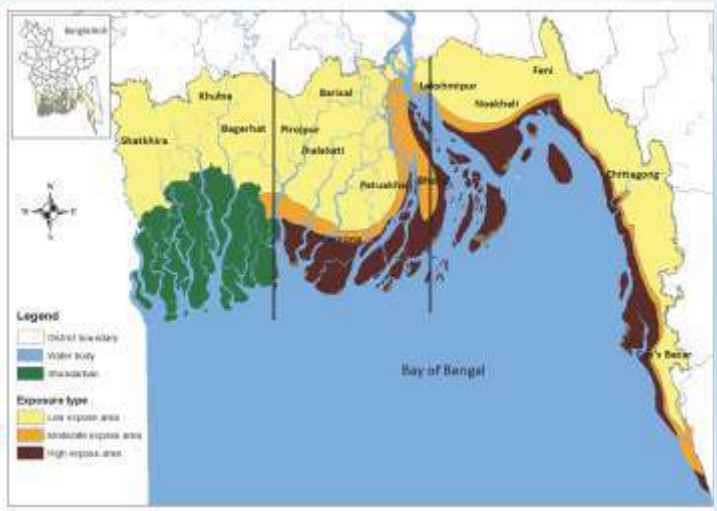


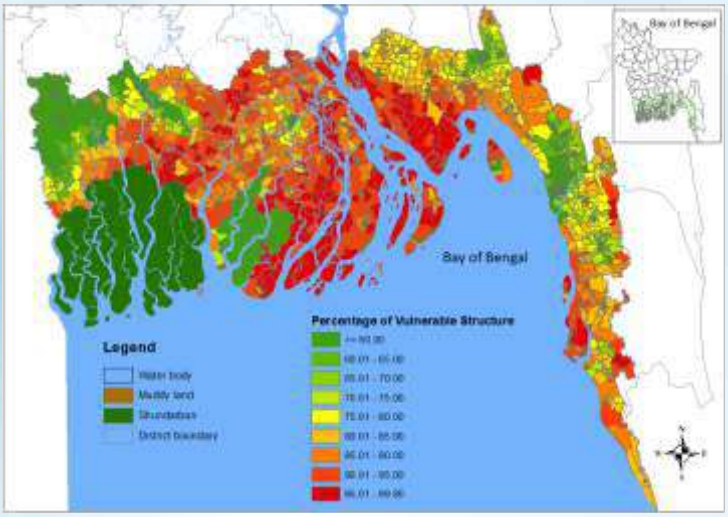
DEVELOPING NATIONAL PROTOCOL OF EARLY ACTION FOR CYCLONE IN BANGLADESH (IFRC/CPP/AMIRICAL RED CROSS/BDRCS)

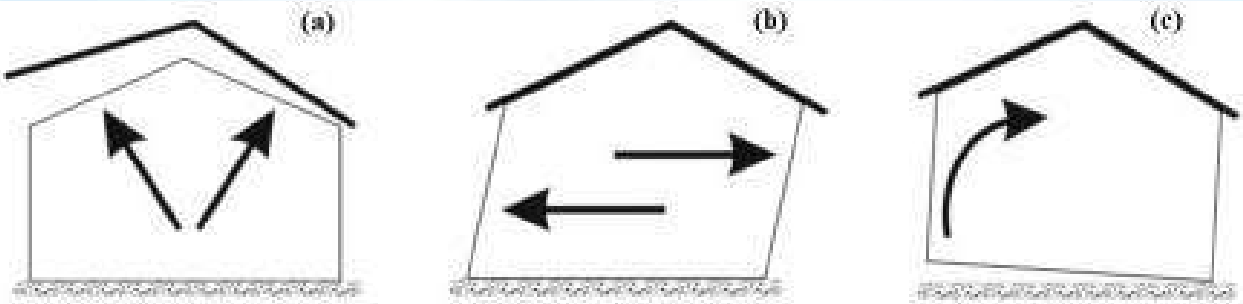
Bangladesh is a low-lying country with a flat topography. Due to Bangladesh's location on the Bay of Bengal and at the confluence of several significant river systems originated in the Himalayas, it is highly exposed to floods and cyclones. According to Inform Risk Index (2022) Bangladesh ranked 27 with the high index value of 5.7. Due to the funnel shaped coast, Bangladesh often becomes the landing ground and breeding place of catastrophic cyclones formed in the Bay of Bengal. Climate variability and change have made these disasters worse, which has increased the vulnerability of the poor people in Bangladesh.

To address these risks, the Bangladesh government has put a lot of effort into building coastal defenses and saving lives. They've done this through initiatives like the Standing Order on Disasters and the Cyclone Preparedness Programme (CPP).

In Recent time, to help the vulnerable group, Forecast-based Action gained popularity across the country. Different actors are adopting FbA / AA strategies based on their own organizational priorities, available resources and expertise – this disrupts the harmony of efforts in FbA / AA during emergencies. Therefore, to mitigate the raised issues, EIMS has been entrusted as consultant by BDRCS, IFRC and American Red Cross to develop National Early Action Protocol for Cyclone in Bangladesh.







Damage due to Cyclone Wind (a) Uplift (b) Tilting and (c) Overturning

	Western Zone	Central Zone	Eastern Zone
Wind	Moderate	High	High
Storm surge	Moderate	High	Moderate
Rainfall	Low	Low	High

DEVELOPING NATIONAL PROTOCOL OF EARLY ACTION FOR CYCLONE IN BANGLADESH (IFRC/CPP/AMIRICAL RED CROSS/BDRCS)

Trigger/Risk Matrix for Rainfall

Likelihood of impacts and lead time		Rainfall in 72hr accumulated			
		<150 mm	150-200 mm	200-250 mm	>250 mm
		Low	Medium	High	Very high
2-3 days	High (<75%)	7	12	14	16
4-5 days	Medium (50-75%)	6	10	13	15
6-7 days	Low (25-50%)	2	8	9	11
> 7 days +	Very Low (<25%)	1	3	4	5

Color Code	Actions on likelihood of impacts
	Activate Anticipatory Action, all actors (12, 13, 14, 15, 16)
	Readiness Anticipatory Action, all actors (8, 9, 10, 11)
	Only Govt. Early Action (6, 7)
	Only Govt. Readiness (3, 4, 5)
	Community Readiness (2)
	Regular monitoring (1)

Trigger/Risk Matrix for Storm Surge

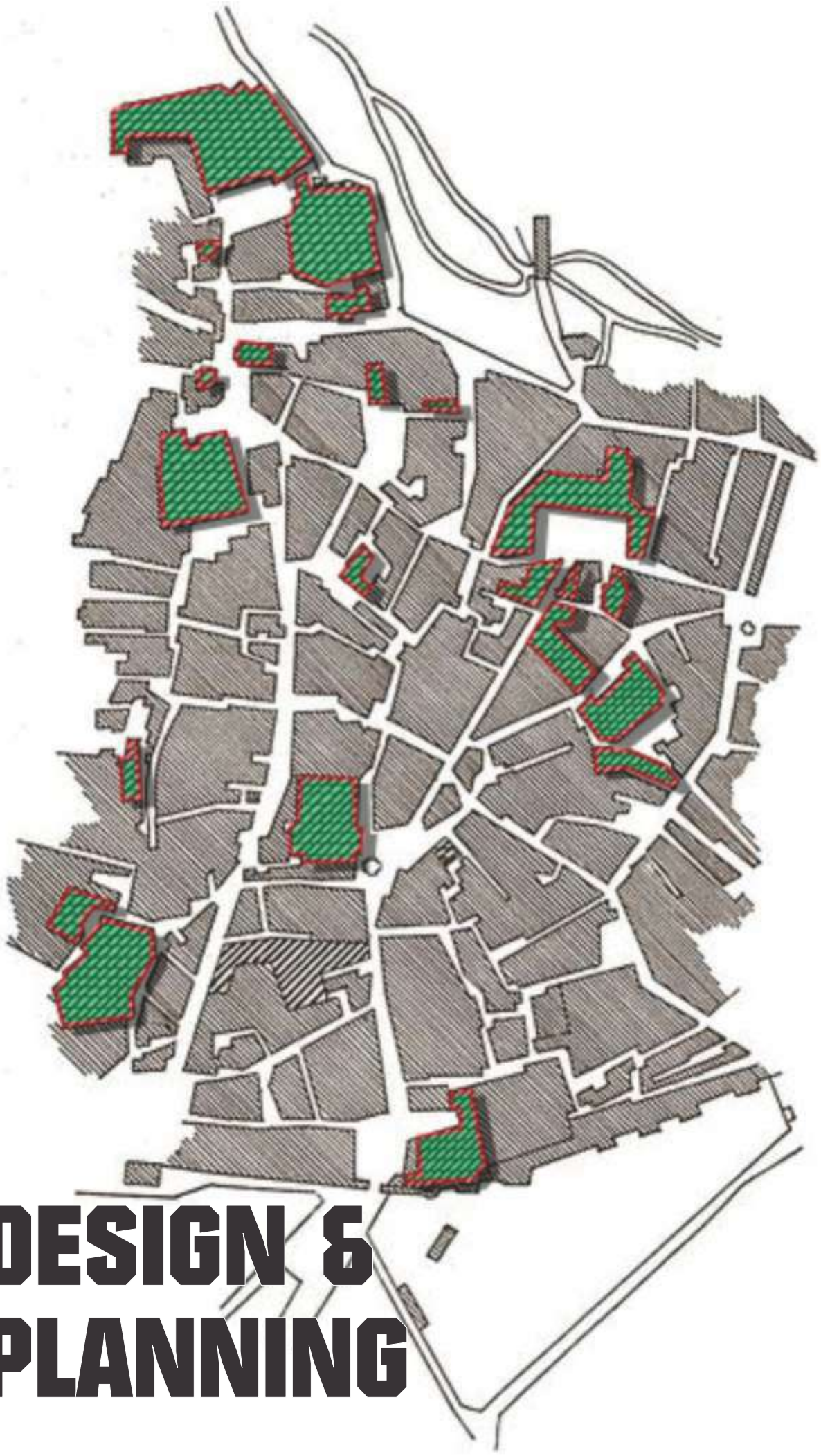
Likelihood of Impacts and lead time		Storm surge			
		<1.5 m	1.5-3.5 m	3.6 - 5.0 m	> 5.0 m
		Low	Medium	High	Very High
36-48hr	High (>75%)	4	10	14	16
48-72hr	Medium (50-75%)	3	9	13	15
72-120hr	Low (25-50%)	2	8	11	12
>120hr	Very Low (<25%)	1	5	6	7

Color Code	Actions on likelihood of impacts
	Activate Anticipatory Action, all actors (14, 15, 16)
	Readiness Anticipatory Action, all actors (11, 12, 13)
	Only Govt. Early Action (9, 10)
	Only Govt. Readiness (5, 6, 7, 8)
	Community Early Action (3, 4)
	Community Readiness (2)
	Regular monitoring (1)

Trigger/Risk Matrix for Wind

Lead time and Likelihoods of Impacts		Wind Speed (km/hr)			
		62-88	89-117	118-221	≥ 222
		Low	Medium	High	Very High
36-48hr	High (> 75%)	6	10	14	16
48-72hr	Medium (50--75%)	5	9	13	15
72-120hr	Low (25-50%)	2	4	11	12
>120hr	Very Low (<25%0	1	3	7	8

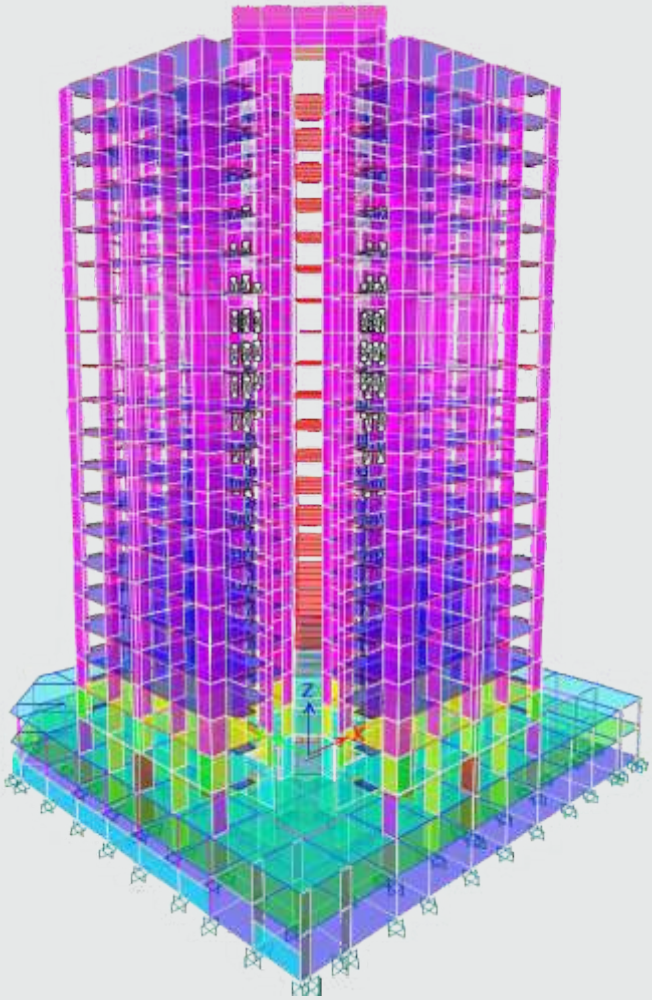
Color Code	Actions on likelihood of impacts
	Activate Anticipatory Action, all actors (14, 15, 16)
	Readiness Anticipatory Action, all actors (11, 12, 13)
	Only Govt. Early Action (9, 10)
	Govt. Readiness (7, 8)
	Community Early Action (5, 6)
	Community Readiness (3, 4)
	Regular monitoring (1, 2)



DESIGN & PLANNING

CONSULTANCY SERVICES

Each project has different approaches depending on the demands. In the design and planning, the engineers and architects comply with the minimum requirements on the building codes. In addition, EIMS undertakes the retrofitting design as being a part of seismic vulneribility assessment. EIMS also assists the clients to get approvals/ permissions from respective government departments. Summary of the consultancy services are mentioned below:



- Structural design and seismic detailing of new developments and tall buildings.
- Architectural and interior design services.
- Topographical surveys.
- Design supervision.
- Fire saftey assessment.
- MEP design services.

FINISHING BUILDING

SWING BUILDING

R&D BUILDING

BADSHA GROUP

PIONEER DENIM LIMITED

PIONEER DENIM LIMITED (GARMENTS DIVISION) OF BADSHA GROUP

The masterful design of eight sprawling factory buildings encompassing a total of 2,000,000 square feet a vital facet of the North Project by the esteemed Badsha Group, these structures are dedicated to serving Pioneer Denim Limited's Garments Division.

The EIMS team took on the dual roles of architects and structural designers, expertly weaving together aesthetics and stability. With precision and innovation, they transformed concepts into tangible spaces that stand as a testament to their unwavering commitment to excellence.

Collaborating seamlessly with the Badsha Group, EIMS's achievement is more than construction; it's the realization of dreams. Beyond bricks and mortar, these buildings embody aspirations, marking a new era of design evolution. EIMS's legacy is etched not only in concrete but in the enduring impact of spaces that inspire and endure.

In the heart of the North Project of Pioneer Denim Ltd., EIMS's designs stand tall, a symbol of their dedication to pushing boundaries and shaping environments that redefine possibilities. With each building, they've etched a chapter in the story of architectural innovation, enriching lives and landscapes.

BARISAL FIELD OFFICE PROJECT, UNICEF

EIMS collaborates with UNICEF to construct an earthquake-resilient Barisal Field Office, addressing its non-compliance with seismic standards. EIMS manages assessments, design, monitoring, and supervision,

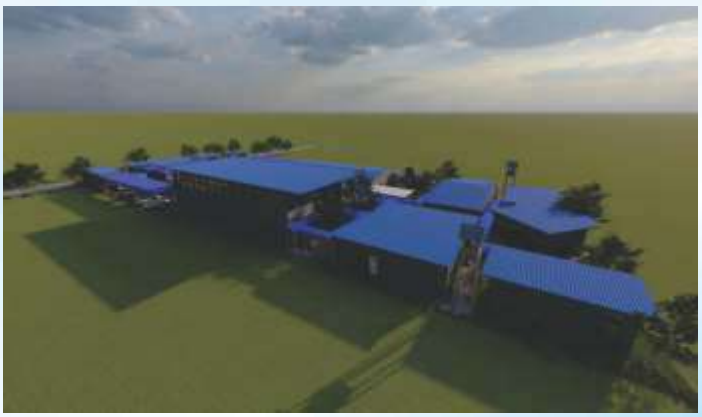
reflecting our commitment to safety. The new three-story building (2200 sq. ft. per floor) exemplifies our expertise in crafting secure structures for high-risk regions.

Our partnership aligns with shared values of impact and sustainability, enabling us to turn UNICEF's vision into reality and further their mission of protecting child rights and welfare.

COX'SBAZAR FIELD OFFICE, UNICEF

EIMS undertook the task of creating a new Coxs Bazar UNICEF office to address spatial and UNDG compliance challenges. Spanning 19000 sq. ft., the project comprises five steel buildings, site development, and landscape design. Our commitment to exceptional office spaces, aligned with international standards, is evident in this initiative. Renowned for pioneering steel building construction, our projects harmonize cutting-edge technology and architectural excellence to foster inspiring and productive environments.

Adhering to UNDG specifications, we ensure optimal work conditions for UN staff, reinforcing our dedication to quality and functionality.



RESIDENCIAL BUILDING AT KAFRUL

The sophisticated design of four storied residential building at Kafrul for Mrs Nahar Islam has taken part in the new era of development of Dhaka city. EIMS team took on the dual roles of architects and structural designers following the new rules of DAP for Dhaka City expertly weaving together aesthetics and stability as well.

Accomplishing the client's demand team EIMS has successfully designed a duplex unit with 2 separate apartment unit in a 2.37 katha plot maintaining architectural aesthetic and natural ventilation. The large terrace gave a tremendous vista of the surrounding beauty of natural environment.

District EPI Building_ FENI

District EPI Building_ CHUADANGA

District EPI Building_ CHUADANGA

GAVI HSS-3

EPI PROJECT UNICEF

Under the GAVI Health System Strengthening III (HSS-3) initiative, significant efforts have been directed towards enhancing the Cold Chain Systems in Bangladesh. The program aims to bolster the national and local vaccine and logistics storage systems, thereby facilitating targeted vaccinations across the country.

The project undertakes a dual approach: introducing new infrastructure and retrofitting existing structures to accommodate WICR facilities, while minimizing construction interventions. This initiative is paramount in aligning storage capacities with the heightened demands necessitated by the COVID-19 response. The process is driven by an experienced consultant engineering company, entrusted with engineering assessments and the development of design, drawings, specifications, and Bills of Quantities (BoQ) for the required construction and renovation activities.

To build an EPI Store facility in 11 districts to install WIC with Standby Generator, Precool Area, and dry Store Facilities. To provide engineering assessment and development of necessary design, drawing, specification, and BoQ for the required Construction/ Renovation activities in 11 districts of Bangladesh to improve vaccine storage facilities under GAVI HSS-3 program.

District EPI Building RAJBARI

District EPI Building CHUADANGA

District EPI Building_ CHUADANGA

District EPI Building_ RAJBARI

LEARNING CENTER

During the second half of 2017 an estimated 687,000 Rohingya across the Myanmar border drove into Cox's Bazar, Bangladesh. The Education sector response plan estimated that over 450,000 children aged between 4-18 years old in Cox's Bazar need access to education services. UNICEF aims to have built a total of 1,453 LCs by 2018. However, the areas of Cox's Bazar are experiencing lots of natural disasters such as Earthquake, cyclones, flood due to heavy rainfall etc. which are a great threat for the existing structures. That's why the education sector wants to have more safe, durable and disaster resilience structures as well as structures those are feasible for different topography in Cox's Bazar for learning centres.

Team EIMS took this challenging job in getting alternative learning centre designs in existing camps and new camps in Cox's Bazar district. The main challenge was to select material for low-cost and easy construction along the climatic challenge it must withstand in that area. Team EIMS proposed low to high hazard design options in terms of durability, topography and location considerations.

JHILMIL RESIDENTIAL AREA APARTMENT PROJECT

Jhilmil Residential Park is the prodigious residential project is under Public Privet Partnership (PPP). Environment & Infrastructure Management Solution (EIMS) Limited was assigned as structural and geotechnical design consultant. The purpose of this project is to reduce the acute problem of housing in Dhaka by buildings 71 nos. twenty (20) storied buildings and 14 nos. twenty-five (25) storied buildings inside the Jhilmil Residential Park Project area.

The lateral-force-resisting system consists of ordinary reinforced concrete shear walls. All the components of the structure have been designed to achieve economy and constructability that provide adequacy against hazards and ultimate human comfort conforming the code provisions of Bangladesh National Building Code (BNBC) 2020.

The construction method for this project is Industrial Building System (IBS) which is a new-fangled technology in the context of Bangladesh's engineering practice. This system offers economy by the taking advantage of the repetitive use of the formworks that results in lest time cost.

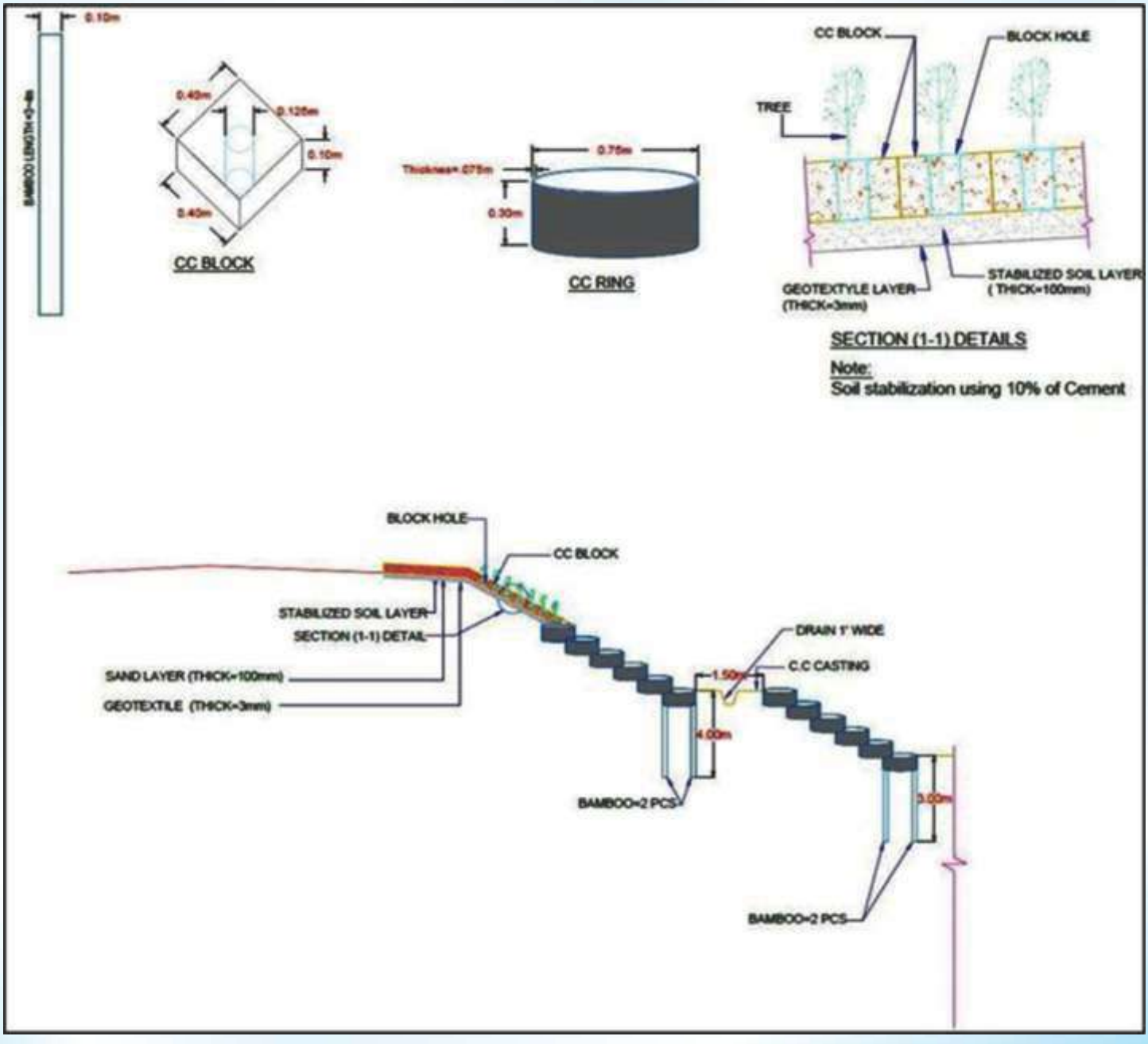
ASSESSMENT AND REMEDIAL DESIGN OF SLOPE PROTECTION AND SOIL INVESTIGATION AT DIFFERENT LOCATIONS OF KUTUPALONG REFUGEE CAMP. THIS PROJECT IS FOR HUMANITARIAN EMERGENCY OPERATIONS IN COX'S BAZAR, BANGLADESH.

In camp 20 extension and other camp area, for establishment, hills had been modified by cutting and filling. In the process, several slopes had been protected by WFP. Most of the natural slopes has been changed. To protect the slope, several measures was taken as ad-hoc basis. Development had also been made in these infrastructure when needed. Now, it was required assessing and remediation of these slopes.

- Assessment of the condition of natural slope
- Identification of endangered areas, failure mechanism etc.
- Conduct Geotechnical Investigation
- Conduct Spot Checking Elevation Survey. Report covering current condition and future plan Slope Stability Analysis
- Design New Slope Stabilization System

Based on topographic survey and subsoil investigation data, cross sections of slopes at 6 borehole locations were drawn. The ground water table is considered 4m below the top of slope and 1m below the toe of the slope. This situation may arise during torrential rain.

All the slopes have adequate safety margin must be protected from rain cut erosion. except one at helipad one, Arafat cake. The surface of slopes There should be proper drainage system with outlet away from the toe of slope. Slope protection using bamboo should not be done anymore because it is not Slopes already should be remediated using recommendations given in this report



VULNERIBILITY ASSESSMENT

EIMS offers building vulneribility assessment of existing structures with experienced assessors and modern tools & techniques. Within a short period, EIMS has conducted initial intrigity assessment over 200 buildings and conducted detailed structural vulnerability assessment of over 100 buildings. Besides this, EIMS has been selected as "Qualified Structural Assessment Firm for the Alliance for Bangladesh Workers' Safety", Department of Inspection for Factories and Establishments (DIFE). Quality assessments provided by EIMS are:

- Preliminary vulnerability assessment as national and international standards (ASCE 41, FEMA 154).
- Non-linear analysis (ASCE 41 Tier 3) and retrofitting design of existing structures for seismic vulneribility assessment.

INITIAL STRUCTURAL INTEGRITY ASSESSMENT

I. EIMS has successfully completed Initial Structural Integrity Assessment of thirty-Seven (37) factory buildings under ALLIANCE for Bangladesh Worker Safety.

II. Structural integrity assessment by Visual inspection (Type-C) on three garments building (FS-SFB#3, FS-SFB#5, FS-SFB#6) of Hop Lun (BD) Ltd. at DEPZ, Ganakbari, Savar, Dhaka.(Detail Structural Analysis is recommended for the garments buildings).

Initial Structural Engineering Assessment for structural adequacy for vertical & horizontal extension of proposed multistoried building for United Surgical Ltd. at Islampur, Kadda, Gazipur, Bangladesh.

DESTRUCTIVE NON-DESTRUCTIVE TEST FACILITIES TO ASSESS STRUCRURAL ADEQUACY OF THE BUILDING COMPONENTS

Rebar Scan using Ferro Scan



Rebar Scanning Using Ferro Scan in Column, Beam & Slab respectively

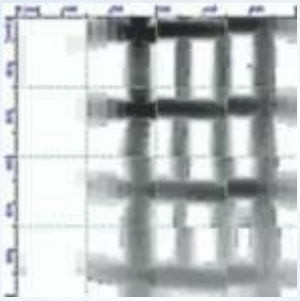
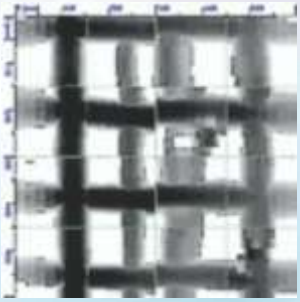
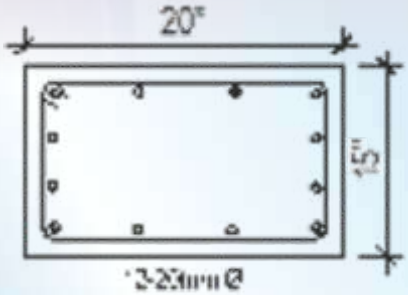



Image Scan of column (two side)

Image Scan of column (two side)



Cross section of Column

Sample Result of A ferro-scan

ULTRASONIC CONCRETE TESTING: (Ultrasonic Pulse Velocity Test)

The Ultrasonic Instrument can be used for several applications including the following:

1. Pulse velocity measurement
2. Path length measurement
3. Uniformity assessment
4. Surface velocity measurement
5. Crack depth measurement
6. Estimating the dynamic elestic mduleus of samples (with the shear wave transducers)
7. Ultrasonic Instrument only. Estimating compressive strength using pulse velocity alone or in combination with a rebound hammer


Ultrasonic Pulse Velocity Testing in Column & Beam respectively

DETAIL ENGINEERING ASSESSMENT

Detail Engineering Assessment (DEA) of Factories Preliminary Assessed by Levi's:

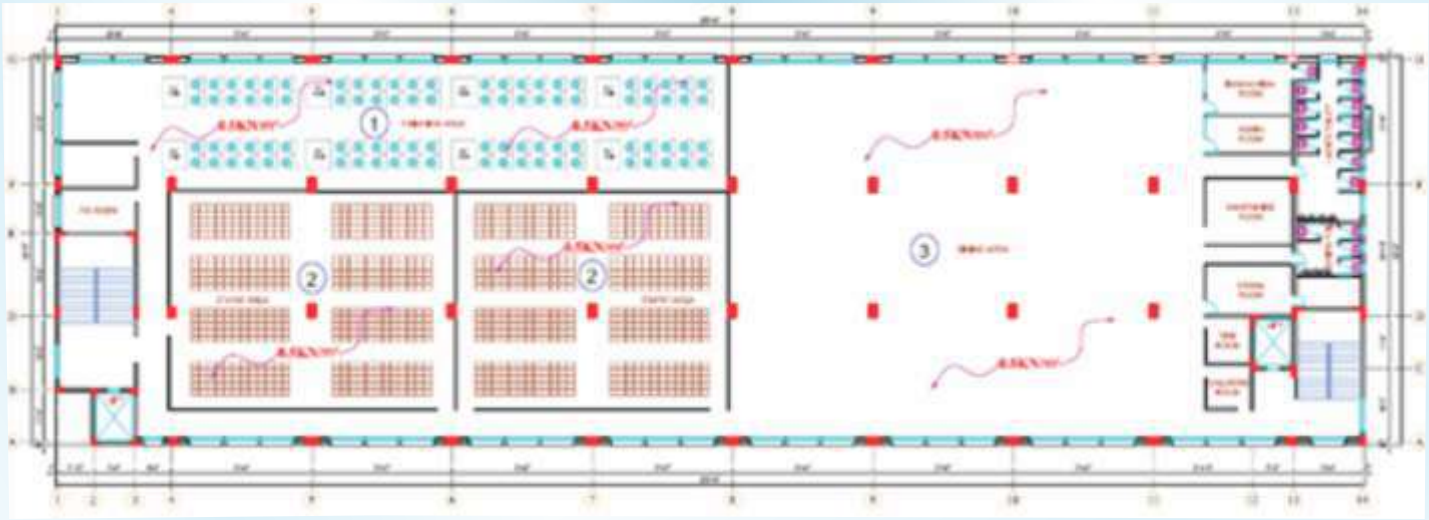
- Two buildings of MBM Garments Ltd at M-19 & M-14, Section-14, Mirpur, Bangladesh.
- Unique Washing & Dyeing Ltd at Kalemeshar, KB Bazar, Gazipur.
- Three buildings of Medlar Apparels Ltd at East Narsinghapur, Ashulia, Savar Dhaka, Bangladesh.
- Eight buildings of Opex Fashions Ltd at at Kanchpur, Sonargaon, Narayangonj.
- Five buildings of Youngone Bangladesh Ltd, Three buildings of Kenpark-1 BD Apparel Ltd and Three buildings of Kenpark-3 BD Apparel Ltd at CEPZ, Chittagong.

i. Detail Engineering Assessment (DEA) of Factories Preliminary Assessed by ACCORD:

- 4A Yarn Dyeing Ltd at Savar, Dhaka.
- Brother Fashions Ltd at Kawranbazar.

ii. Detail Engineering Assessment (DEA)of Padma Pictures Limited. Approximate Floor areas 80,000 square feet. The scope of consultancy services given to EIMS is as following:

- Sub-soil Investigation.
- Core Test.
- Ferro-Scanning in Column, Beam and Slab.
- UPV (Ultrasonic Pulse Velocity) Test.
- Checking of structural stability and geometry.
- Checking adequacy of foundation i.e. pile & pile cap or footing/raft.
- Checking of lateral load resistance capacity of the Building.
- Design check for soft story & Dynamic Load.



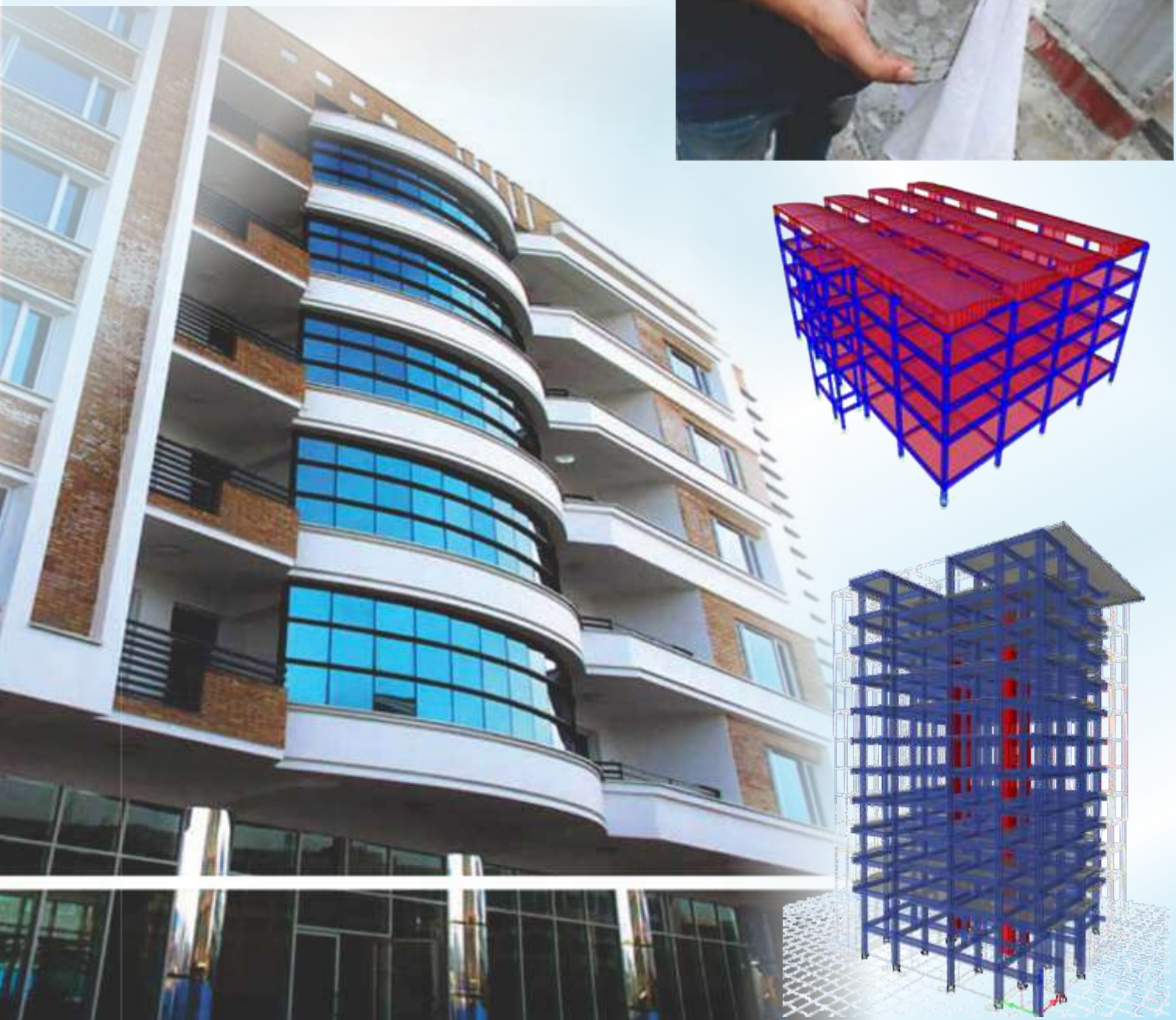
(1) FINISHING AREA

(2) CT-PAT AREA

(3) DINING AREA

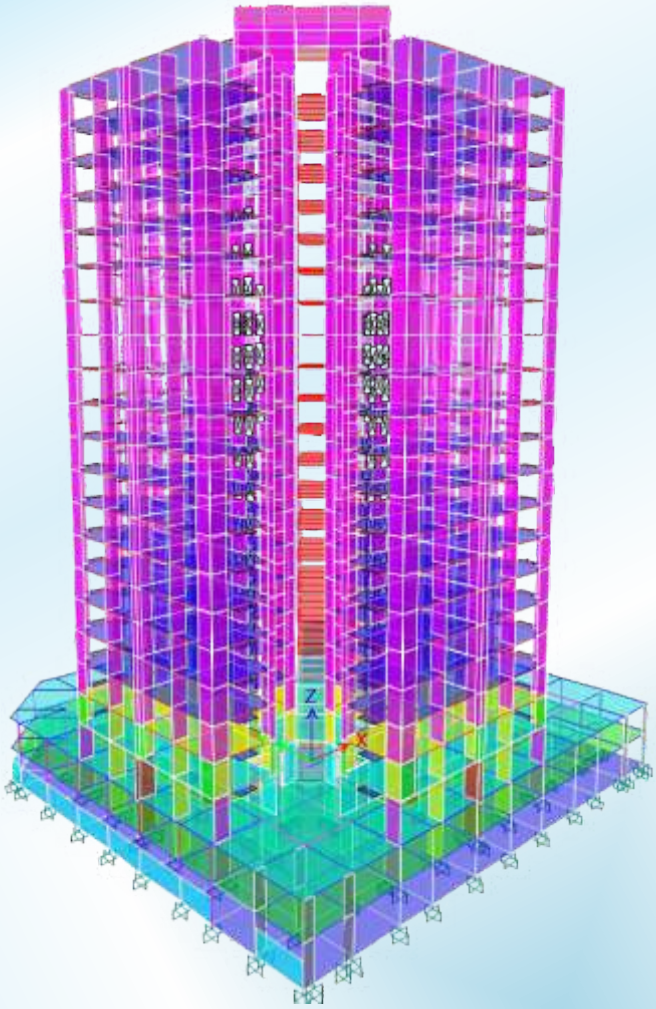
CONCRETE CORE TEST

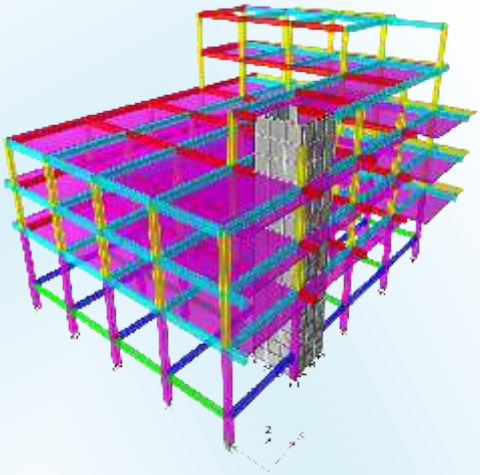
- This is one of the very reliable tests adopted for checking the comprehensive strength of the 'In situ concrete'.
- Other physical properties such as density, water absorption can also be measured from the core concrete.
- In addition, chemical properties of concrete specimen for its cement content, carbonation depth, chloride and sulphate content may be measured.

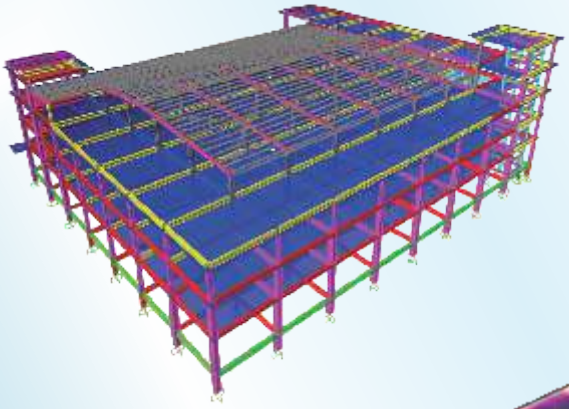


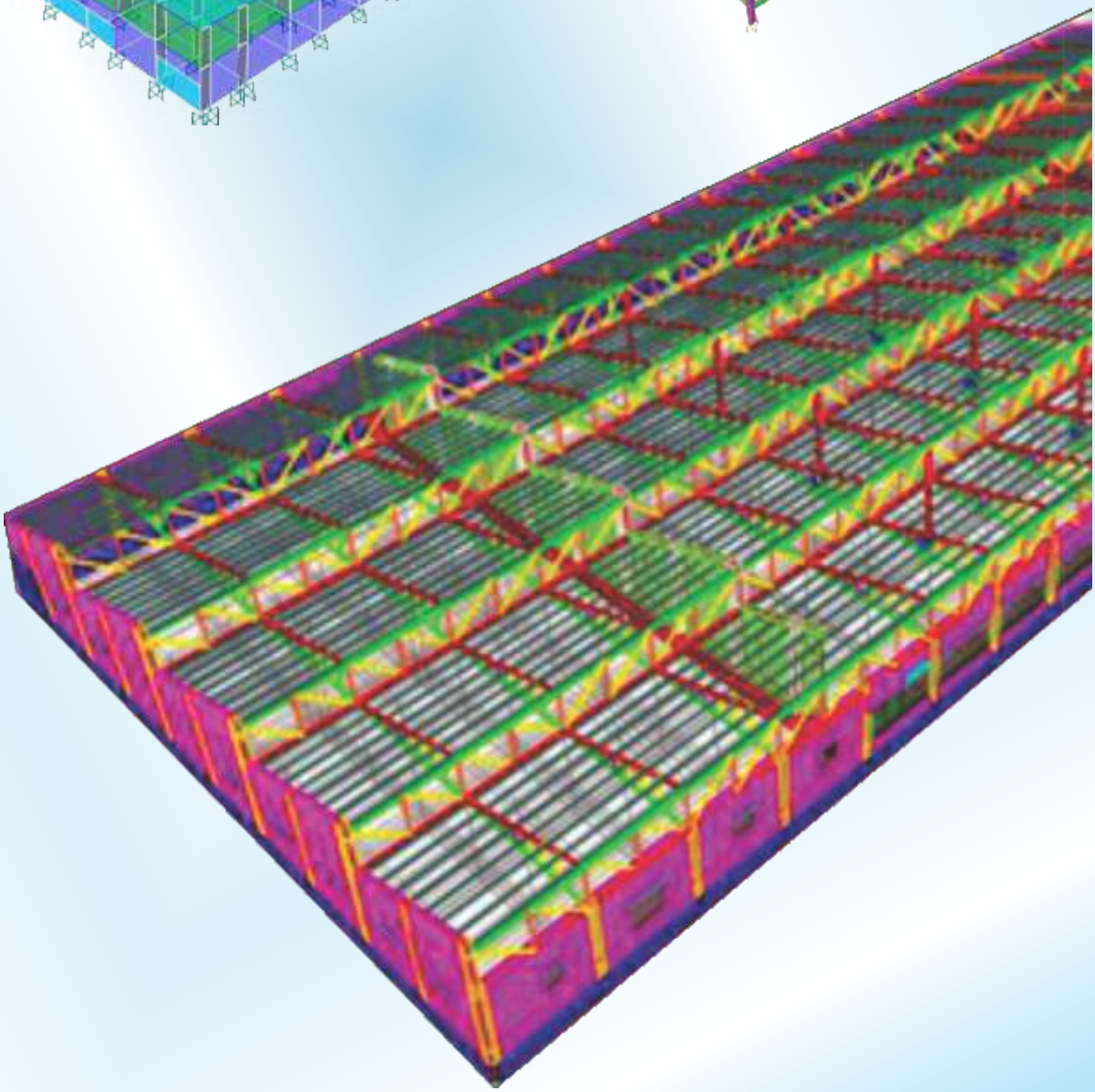
- Retrofitting Design of two buildings of Medlar Apparels Ltd at Ashulia,
- 4A Yarn Dyeing Ltd at Savar, Dhaka.
- Retrofitting of Academic Building of American International School, Dhaka.
- Retrofitting of Brothers Fashions Ltd, Karwan Bazar, Dhaka.
- Three buildings of Kenpark-1, BD Apparel Ltd at CEPZ, Chittagong.
- Eight factory buildings of Opex and Sinha Textiles Ltd, Dhaka.
- Three buildings of Kenpark-3, BD Apparel Ltd at CEPZ, Chittagong.

Computer Simulated FEM 3D Model









CONSTRUCTION

SERVICES WE PROVIDE

Over the years EIMS has undertaken many challenging construction projects. Our objective is to provide our client with a "we are for your safety" experience when we are awarded to execute their projects. We have completed a lot of construction projects all over Bangladesh.

Since 2011, we have been strongly committed to providing our customers with the highest level of service in construction markets. Building and maintaining relationships with our customers is at the heart of our business and we have a planning and management style that is consultative and systematic.

We believe in a proactive approach to all aspects of our business, but in particular to quality, safety, and delivery. By getting this right, we give our customers confidence and peace of mind during the process of planning, design and construction. The hands-on responsibilities and team approach of company director's in our organization with a powerful and proven synergy.

We directly employ the largest and most experienced construction team and we have the ability to deliver any scale of a construction project.

Because we employ our own qualified tradesmen and apprentices we are better able to maintain high standards of quality, safety, and delivery. To support these staff we have a team of construction management professionals that includes experienced and qualified quantity surveyors, project managers, and dedicated full-time health & safety professional.

We are committed to the future of our industry and training is regularly undertaken externally and within our business activities.

For undertaking construction of any building we are considering following methods:

1. New Building construction
2. RCC retrofitting (footing, beam, column)
3. Steel retrofitting
4. URM wall retrofitting

CONSTRUCTION OF GYM CUM OFFICE AT UNHCR COXSBAZAR

Project Description:

Total objectives are to construct two storied gym cum office steel building inside the UNHCR sub office at Cox's Bazar.

Component A: Supply of the quality materials in all stage of the construction work as per scope

Component B: Project Scheduling and implement as per drawing with the proper allocation of the workers.

Component C: Handed over as per revised decision of Client including testing and commissioning of all required items.

Services:

- Task-1: Completion of foundation work including pedestal column construction.
- Task-2: Soil refilling, compaction including GB construction and anchor bolt setting for steel column foundation.
- Task 3: Total steel framing work (beam, column) deck bond slab and roofing including necessary painting.
- Task 4: Concreting of three floor including all false slab, lintel and patent stone casting at roof.
- Task 5: All the brick wall and plastering work as per drawing, curing, fire stair and door setting.
- Task 6: All electrical line installation including supply of AC, lights, fan, all required to complete the work.
- Task 7: Wall mounted and floor mounted IT network installation for 180 points and necessary equipment.
- Task 8: Total plumbing network of water supply and disposal line including supply of all necessary materials.
- Task 9: All finishing work (tiles work, painting, window setting false ceiling with wooden framing) under the scope.

RETROFITTING CONSTRUCTION OF SAINT JOSEPH HIGH SCHOOL BUILDING

The School building of St. Joseph Higher Secondary School is 4-storied building located at House 97, Asad Avenue, Dhaka. The building was analyzed according to BNBC and detail Retrofitting design was suggested. As per retrofitting design Construction works of Phase-1 was initiated on 11 October, 2021 and completed on 20 October, 2021. The retrofitting Construction works were implemented maintaining the quality And standard as per the retrofitting des

RETROFITTING CONSTRUCTION AND VERTICAL EXTENSION OF UTAH FASHION LIMITED (UFL)

Retrofitting work (RCC) has been done as per design in the 2 storied Main Production Building at salna, Gazipur. After DEA (Detail Engineering Assessment) in retrofitted Main Production Building, vertical extention has been done 5 nos floor (38,000 sqft) as per design and drawing.

Retrofitting Construction - Wash Extension Building

The Wash extension building of Kenpark Bangladesh (Pvt.) Limited (K-1) is located at Plot No. 31-42, Sector No. 08, CEPZ, Chittagong. The total area of the building is about 730.8 m¬2. The structural system of the building is RCC beam-column on the first & second floor and rafter with purlin in the roof. The building is constructed on a column individual foundation as per drawing and during construction, it was verified. The factory building has one stair, one fire stair, and one lift core. Shear wall in the lift core is found in the building framing system. Therefore, the building can be classified as an ordinary moment-resisting frame (OMRF). BUET technical team conducted a visual inspection of the building. Based on visual inspection, the BUET team recommended conducting a Detail Engineering Assessment of the building. So retrofitting design was prepared.

Retrofitting Construction of 3D Building

The Wash extension building of Kenpark Bangladesh (Pvt.) Limited (K-1) is located at Plot No. 31-42, Sector No. 8, CEPZ, Chittagong. The total area of the building is about 1098.68m2. The 3D building is a three (3) storied RC beam slab structure. The building is constructed on a spread footing foundation as per drawing and during construction, it was verified. Shear wall in the lift core is found in the building framing system. This building is having an Ordinary Moment Resisting Frame (OMRF). BUET technical team conducted a visual inspection of the building. Based on visual inspection, the BUET team recommended conducting a Detail Engineering Assessment of the building. After the assessment, it was found that 18 nos. of foundations, 16 nos. of grade beams, 120 nos. of columns, and 38 nos. of floor beams were inadequate. So retrofitting design was prepared.

Retrofitting Construction of WASH Steel Building

The WASH steel building of Kenpark Bangladesh (Pvt.) Limited (K-1) is located at Plot #31-42, Sector#08, CEPZ, Chittagong. The total area of the building is about 1818.0 m¬2. The structural system of the Wash steel building is a multi-gable framed structure. The factory building has one story. BUET technical team conducted a visual inspection of the building. Based on visual inspection, the BUET team recommended conducting a Detail Engineering Assessment of the building. After the assessment, it was found that 33 nos of the pedestal, 33 nos of steel column, and 28 nos of rafter were inadequate. So retrofitting design was prepared by EIMS.

Construction of Surma Garments Washing and Finishing Co. Ltd.

Surma Garments Washing and Finishing Building of Youngone Group (CEPZ) Limited is a two-storied concrete moment resisting frame structure with a mezzanine above the ground floor in two blocks of the building. This structural system is a (beam-column framing) Ordinary Moment Resisting Frame (OMRF) system. BUET technical team conducted a visual inspection of the building. Based on a visual inspection of the BUET team, it was recommended to conduct a Detail Engineering Assessment (DEA) of the building. After conducting the detailed engineering assessment some beams, columns, and foundations were found inadequate. Therefore, the retrofitting design was conducted, and the implementation of the proposed design had been done accordingly.

Retrofitting Construction of TSL Extension Building

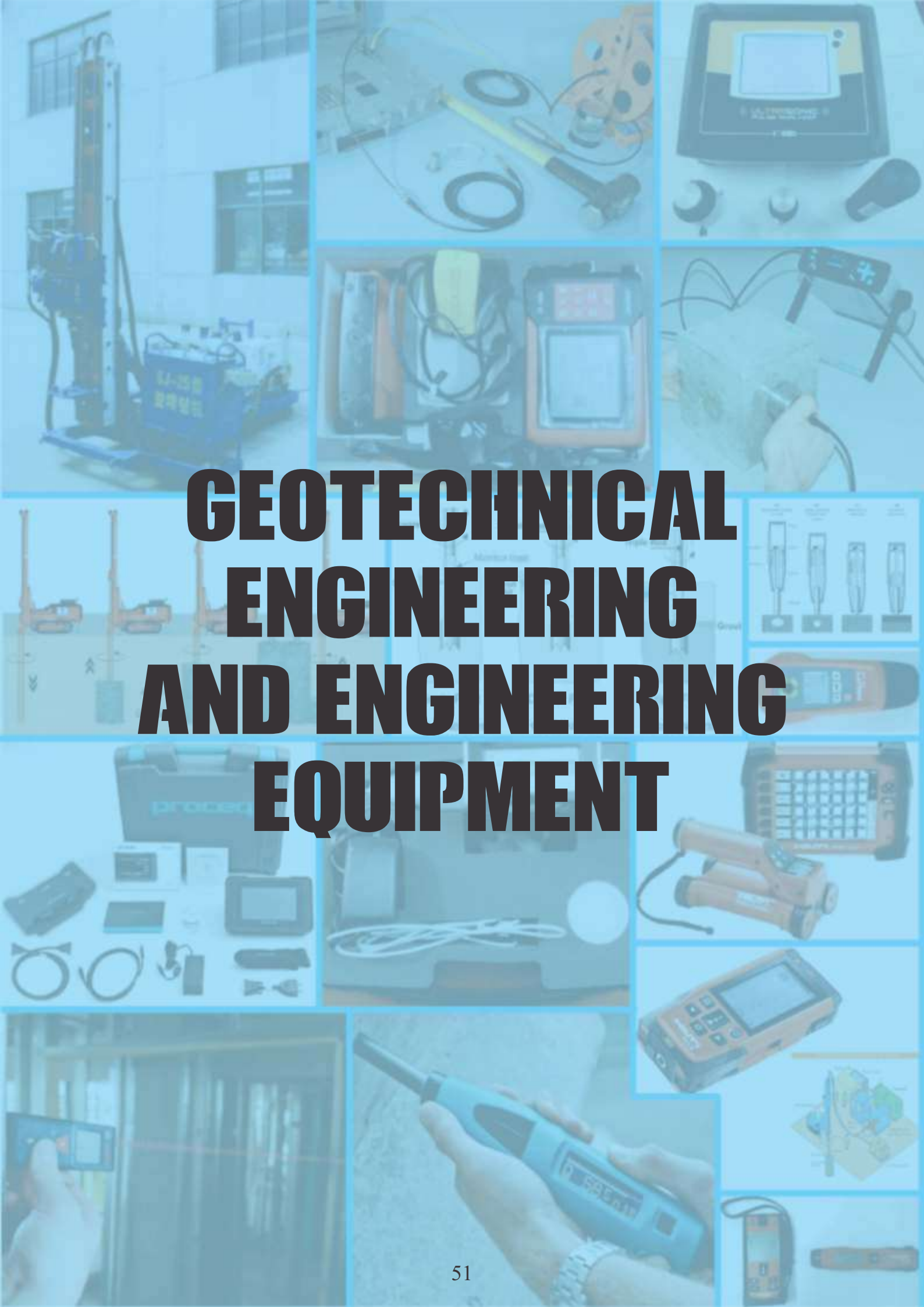
TSL Extension Building of Youngone Group (CEPZ) Ltd is a six storied concrete moment resisting frame structure. BUET technical team conducted a visual inspection of the building. Based on a visual inspection of the BUET team, it was recommended to conduct a Detail Engineering Assessment (DEA) of the building. After conducting the detailed engineering assessment some beams, columns, and foundations were found inadequate incapacity. Therefore, the retrofitting design was conducted, and the implementation of the proposed design had been done accordingly.

Retrofitting Construction of Unreinforced Masonry Wall

The factory building of Univogue Garments Co. Limited (Unit-4, Shed-1) is a single-storied steel structure with a mezzanine floor. It is a structure having an area of about 69800 sft. approximately. As per BUET recommendation, the URM wall located at the exit way of the Quality Control Room on the ground floor of this building has to be retrofitted to avoid out-of-plane failure during an earthquake. So retrofitting design was required as per recommendation. The wall has been retrofitted to protect the out of plane failure during an earthquake.

Retrofitting Construction of Univogue Garments Co. Ltd.

The factory building of Univogue Garments Co. Limited (Unit-2) is a multiple-gable framed steel structure. It is a single-storied structure having an area of about 28,000 square feet. BUET technical team conducted a visual inspection of the building. Based on a visual inspection of the BUET team, it was recommended to conduct a Detail Engineering Assessment (DEA) of the building. After conducting the detailed engineering assessment some RCC pedestals, steel columns, and rafters were found inadequate in capacity.



GEOTECHNICAL ENGINEERING AND ENGINEERING EQUIPMENT

GEOTECHNICAL INVESTIGATION & ANALYSIS

For any type of heavy construction work and other purposes, the geotechnical investigation is a prerequisite. EIMS provides various geotechnical facilities as follows:

1. Field Tests

SPT (ASTM D1586/D1586M)

Downhole Seismic Test ASTM D7400

SCPT ASTM D7400

2. Geotechnical Laboratory Tests

Moisture content (ASTM D 2216)

Grain size analysis (ASTM D 1140)

Liquid limit and Plastic limit (ASTM D 4318)

Shrinkage limit (ASTM D4943

Specific gravity (ASTM D 854)

One dimensional consolidation test (ASTM D2435/D2435M)

Unconfined compression test (ASTM D2166/D2166M)

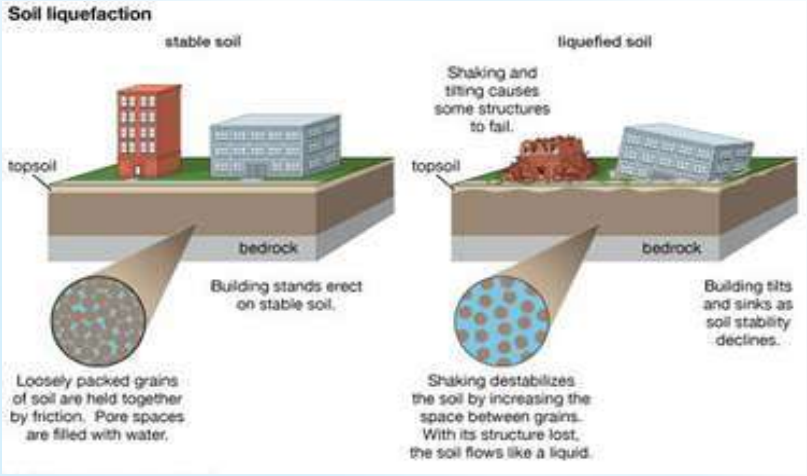
Consolidated drained direct shear test (ASTM D3080/D3080M)

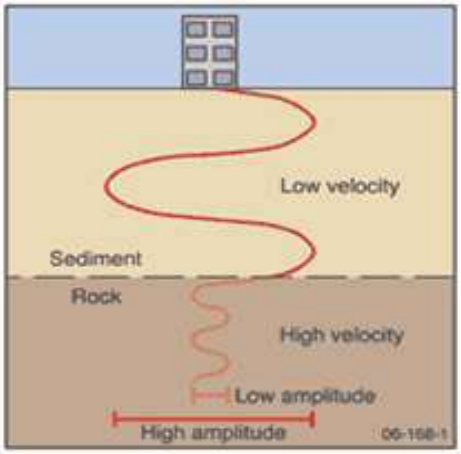
3. Geotechnical Seismic Risk Analysis

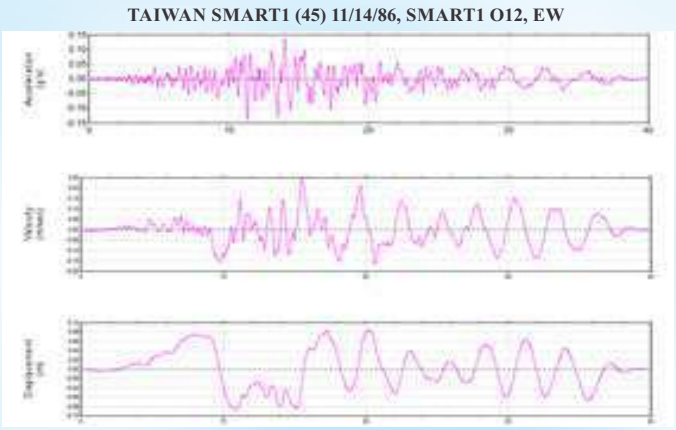
Liquefaction & Amplification Analysis

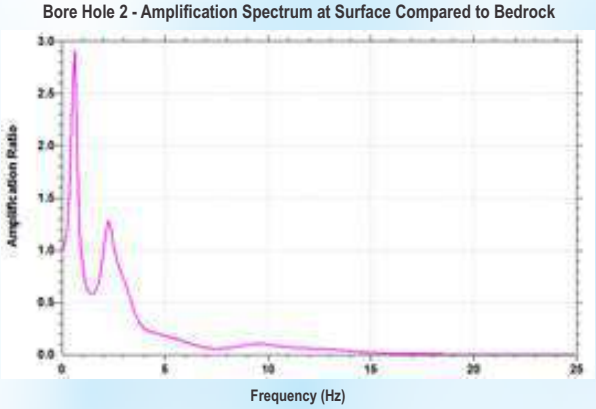
Liquefaction is a phenomenon in which a saturated or partially saturated soil substantially loses strength and stiffness in response to an applied stress such as shaking during an earthquake or other sudden change in stress condition. When liquefaction occurs, the soil or material that is ordinarily a solid behaves like a liquid. Liquefaction has been responsible for tremendous amounts of damage in historical earthquakes around the world. So it is very essential to assess the liquefaction potential prior construction of any high rise structures with weak soil profile.

Moreover, to understand the soil structure interaction, site specific amplification becomes a very important information during design of a heavy structure for many sites. EIMS offers a sophisticated analysis for liquefaction and amplification.









4. Soil improvement

Jet Grout

Jet Grouting is a technique characterized using the pressurized fluid jet to hydraulically either before or concurrent with the addition of the grout material to form a solidified in situ element known as Soilcrete (specialized cementitious slurry mixture designed specifically for soil stabilization/modification). Jet grouting as a soil improvement technique is currently utilized throughout the world.

It is one of the effective solutions against liquefaction which occurs due to an earthquake in liquefiable sandy soil. So, it is a great technology for building a safe structure in earthquake prone country like Bangladesh.

Parallel Seismic Instrument (PSI)

It occasionally happens that doubts about the integrity and length of concrete and sheet piling arise only after the structure is complete. The pile heads are no longer accessible and other non-destructive test methods are of little use. The Parallel Seismic test has been developed as a test that can be used when the pile is still connected to the superstructure. Applications include:

- Determining the embedded depth of sheet piling
- Confirming the depth of piles underneath caps and structures
- Checking the depth of masonry and footings

This Instrument can be used to assess the continuity of foundations below buildings and pile caps.

- Testing can be carried out through a pile cap.
- Equipment is light, portable, and suitable for remote locations.
- Software is user friendly and windows based.
- Testing requires a tube to be installed and grouted in place alongside the pile.

This Parallel Seismic instrument checks the integrity of structures below ground and under buildings:

- Measurement of foundation depth
- Can be used on pre-cast concrete, cast in place concrete, and timber piles
- Depth of sheet steel piling
- Assessment of masonry foundations
- Locating breaks and discontinuities in foundations

Ferro Scanner

Reinforcement of concrete is an important part for RCC buildings. To evaluate the existing embedded reinforcement for assessing any RCC structure scanning is very important test. It is a non destructive test and also used for checking the concrete clear cover. The mechanism of ferro scanning is almost like X-ray of human body.

- Scans large areas of concrete quickly and easily
- Provides accurate depth of cover measurements for reinforcement at depths of up to 100 mm
- Displays a clear 2D image of the reinforcement on the monitor for on-the-spot structural analysis and depth of cover assessment
- Records scan data automatically over lengths of up to 30 meters and up to 9 Image scans

It's also used for Rebar verification and analysis and checking concrete cover over large areas for structural repair work. It is also used for Building acceptance inspections and quality control and helps avoid costly rebar hits and damage caused by cutting through structurally significant reinforcement when coring and hammer drilling.

Schmidt Test Hammer

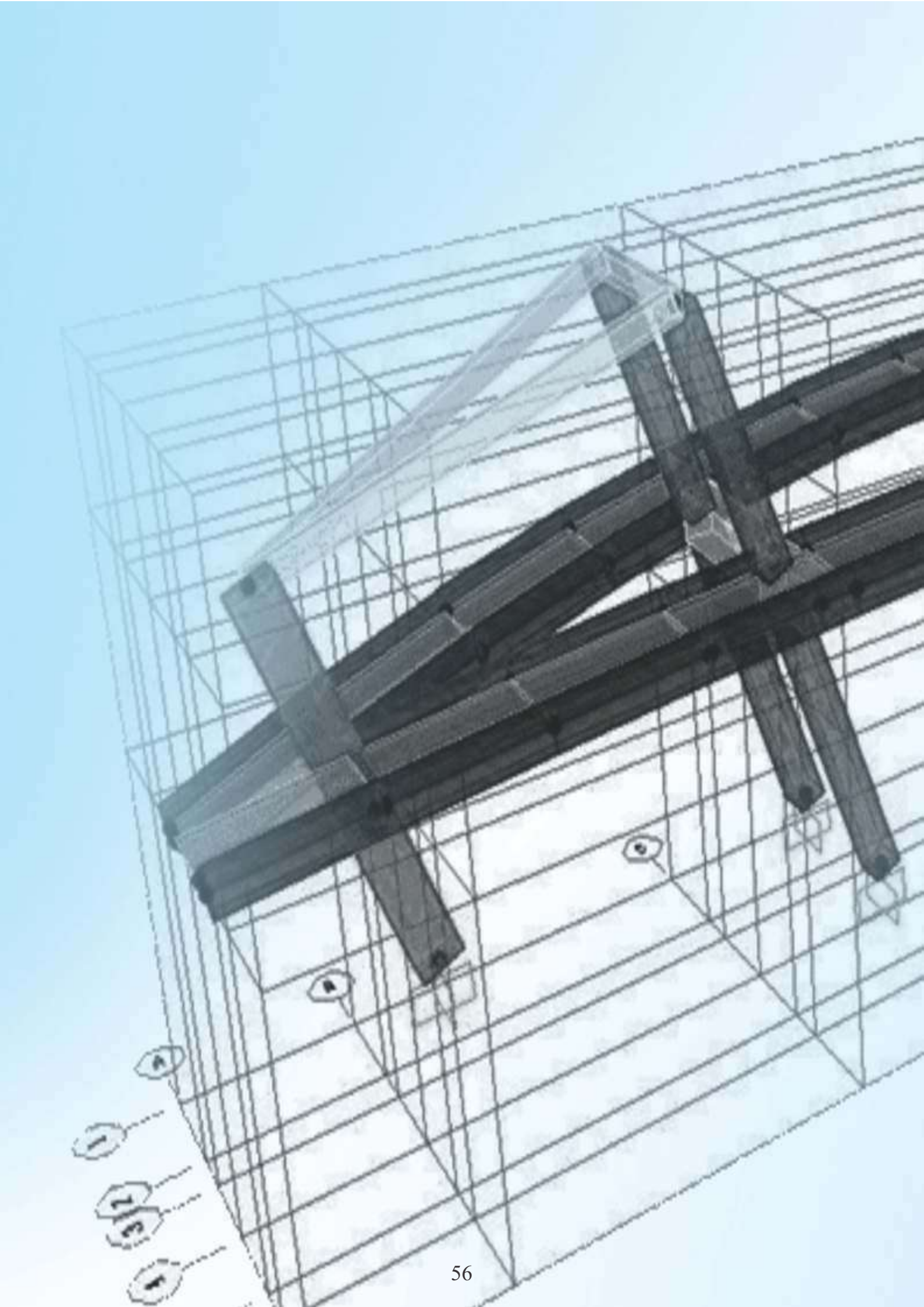
The Schmidt test hammer has been redesigned to provide unmatched accuracy, repeatability and easy, intuitive operation. The Silver Schmidt

- Digital scope, 2 MHz sampling rate, 12 bit resolution
- Advanced picking algorithm providing the real arriving time of the pulse
- Signal processing by FFT method (Fast Fourier Transform)
- Assessment of concrete strength with combined method Ultrsonic velocity/Rebound index (SonReb)
- 7 selectable pre-amplifier gains (impulse amplitude)
- Transmitter pulse 2500 V
- Transit time up to 16 ms with 0.1 μs reolution
- Slot for memory card to save data (2 GB=30000 tests)
- 6" Multifunctional touch screen display

Ultrasonic Pulse Analyzer

Levelling Instruments

An Auto Level is a Professional Leveling Tool used by Contractors, Builders, Land Surveying Professionals, or the Engineer who demands accurate leveling every time. Auto Levels set up fast, are easy to use, and save time and money on every job.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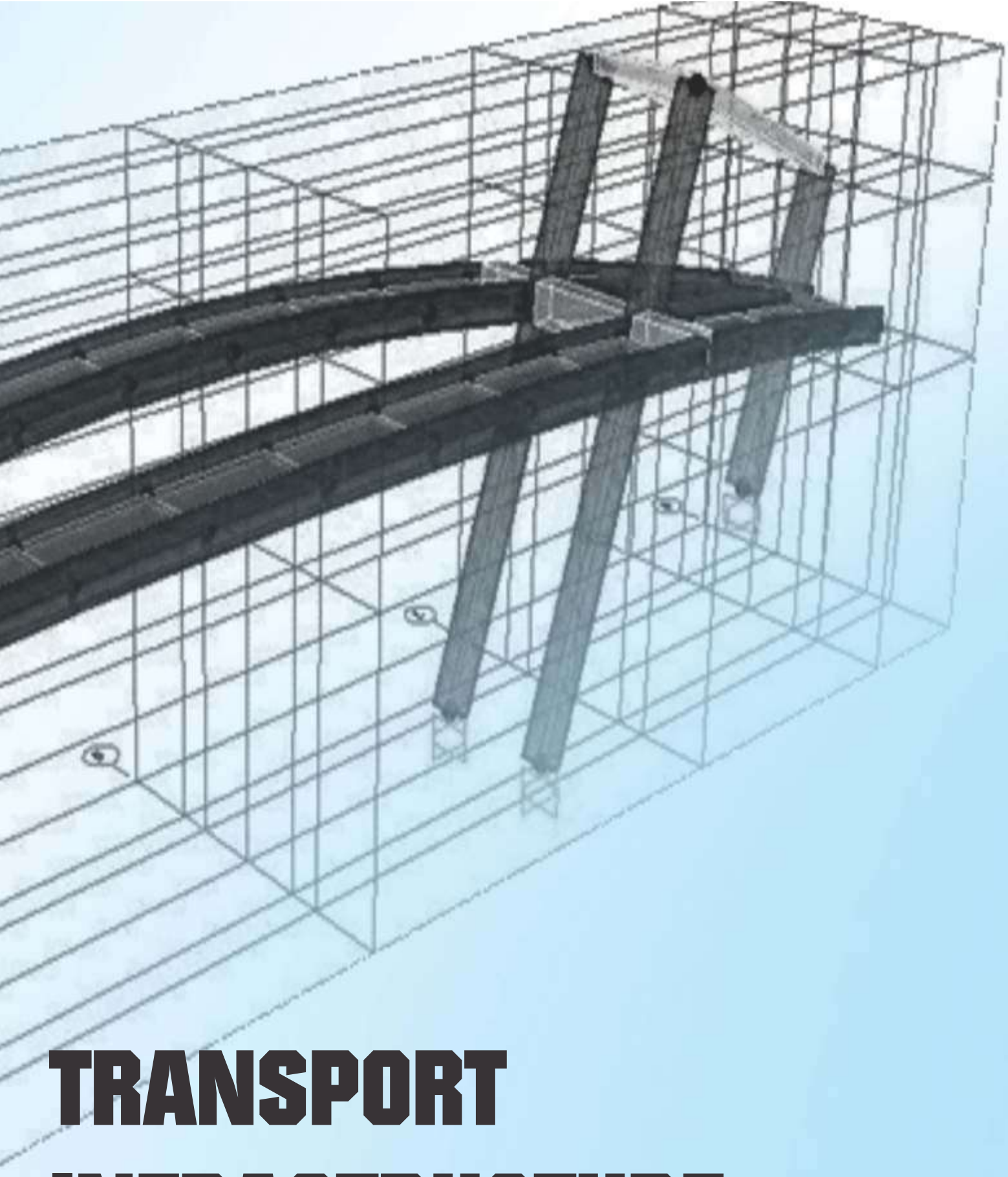
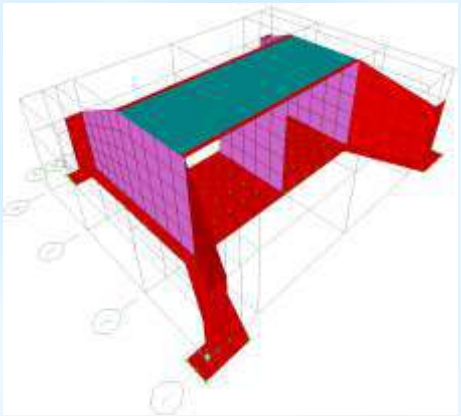


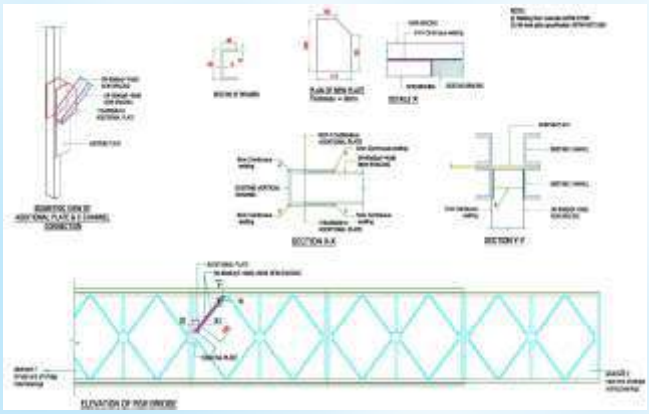
TRANSPORT INFRASTRUCTURE SECTOR

In transport infrastructure sectors, EIMS has experience in multiple areas i.e. roads, highway and pedestrian and connecting bridge design and design review services, road base stabilization, slope stabilization of road etc. of different government and non-governments sectors, WFP and other administrative sectors in last 5 years. However some selected experiences are related to the sectors are discussed below.

Engineering services for the Geotechnical and Structural design of several bridges and slope protection analysis of roads and dams for humanitarian emergency operations in Kutapalong Rohingya refugee and host community, Cox's Bazar, Bangladesh.

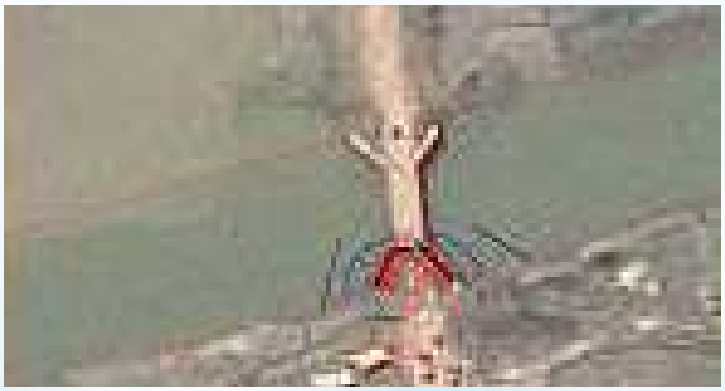
- Strengthening of Lambashia Bridge: A vehicular bridge in Lambashia, leading up to the Kutapalong refugee camp in Coz's Bazar, Bangladesh. The weight limit on the bridge was 5 tons, as set by the Bangladeshi Army. WFP seek to increase the maximum load bearing capacity to 10 tons or more, and to reinforce the sides of the bridge to prevent soil erosion weakening the structure.
- ChouKhali Bridge Vetting: The 36m modular steel bridge was at manufacturing stage and the fabrication of modular abutments requires WFP's technical input based on geotechnical information that requires an insitu assessment.
- Fish Bridge: retrofitting design of a damaged diagonal truss member steel C channel enclosing the panel of Fish Bridge.

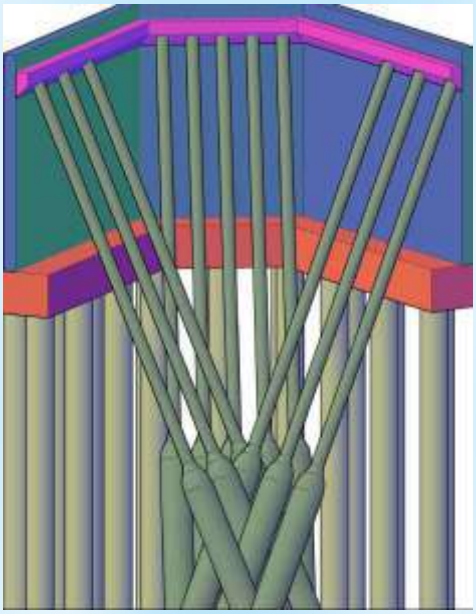


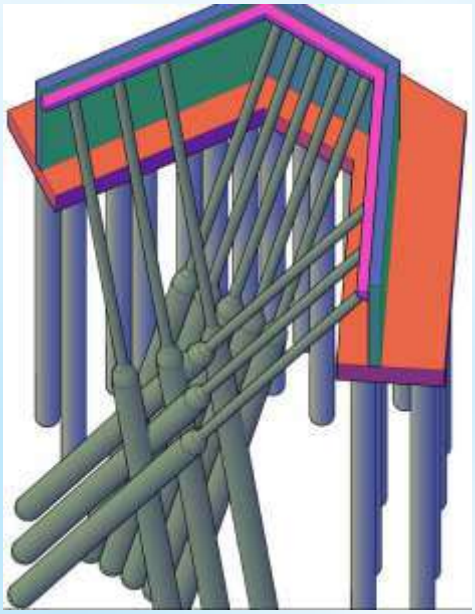


Retrofit Design & Construction of Bridge and Approach road [Contract for Jet Grouting, Anchor Piling and Retrofitting of Abutment of 24 Meter Bridge (Bridge-2), at Mirsarai Economic Zone, BEZA)].

- Assessment of damaged 24m long deck bridge to carry heavy loaded long-vehicles considering load same as highway bridges and following AASHTO code and FHWA code
- Design and Jet grouting in approach road in both side of the mentioned bridge considering load same as highway following AASHTO code
- Vertical anchor piling to be connected with extended pile cap of damaged abutment and inclined anchor piling to be connected with anchor beam of damaged and undamaged abutment.
- Dismantling and reconstruction of damaged abutment including labors, Excavation and backfilling, pile head breaking, concreting of pile cap, pier, and pier cap, site preparation, removal of debris from to suitable location, etc.

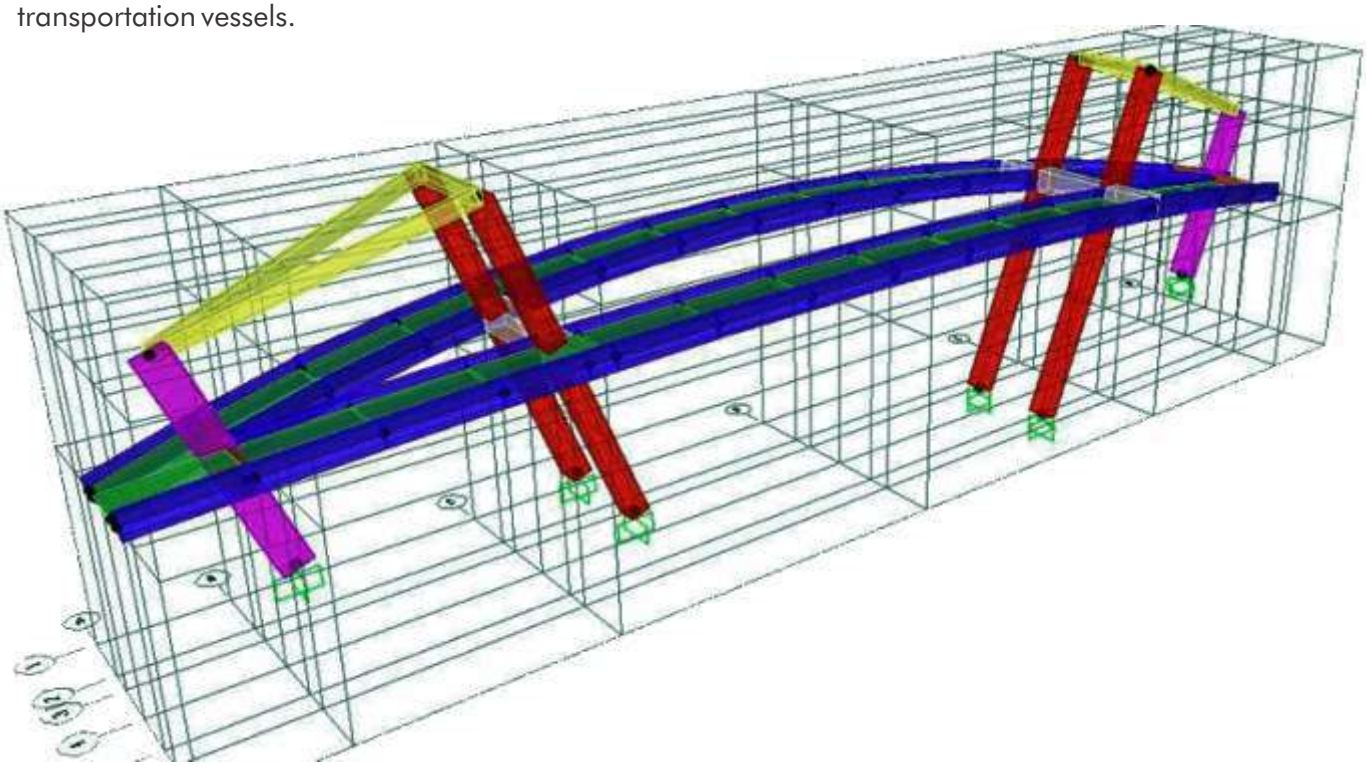






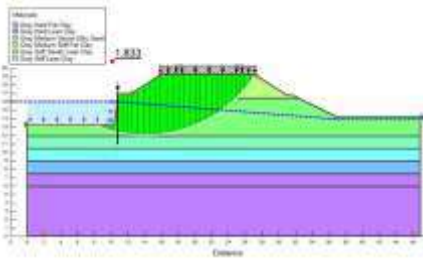
CONSULTANCY SERVICES OF BURIGANGA (PHASE 2) BRIDGE PROJECT, BANGLADESH INLAND WATER TRANSPORT AUTHORITY (BIWTA)

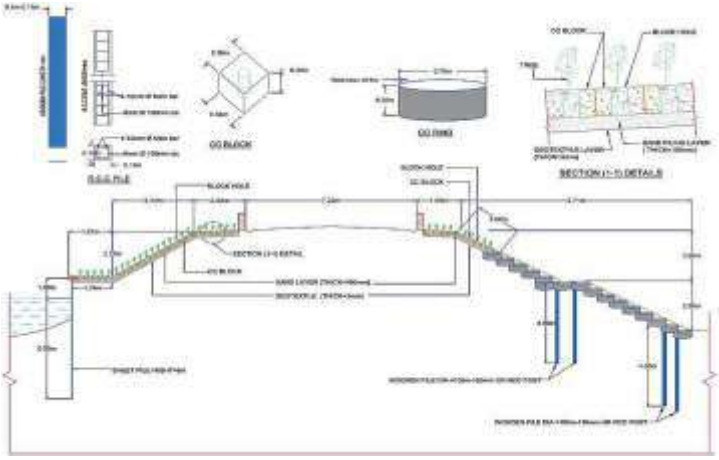
- In this project, a total 52 km length of the pedestrian walkway and quay wall along the bank of the Buriganga River will be constructed in the 1st phase of this project to project the riverbank against the river erosion and beautification of river side.
- Later on, the quay wall and pedestrian walkway will be extended for the Turag, Balu, and Shitalakya Rivers.
- Moreover, a total of 11 jetties will be planned and design to facilitate the loading and unloading of river transportation vessels.



ASSESSMENT AND REMEDIATION DESIGN OF DAM OF LAKE BANK PROJECT UNDER WFP, COX'S BAZAR, CHITTAGONG, BANGLADESH.

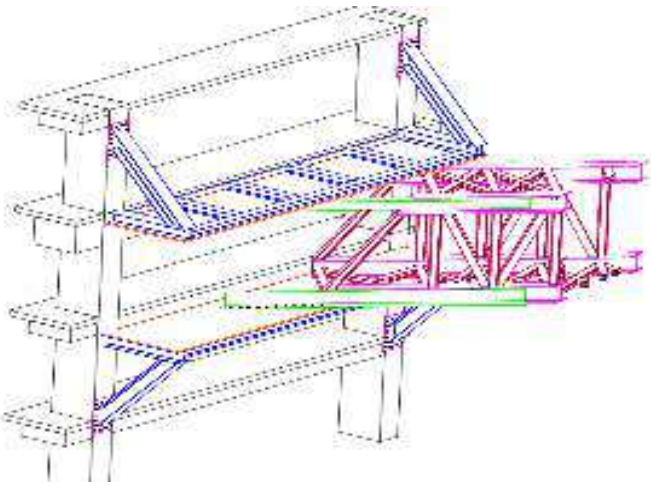
- This project is for humanitarian emergency operations in Cox's Bazar, Bangladesh
- .In EIMS has carried out slope stability assessment and side slope protection of dam constructed in Camp 20 extension, Kutapalong refugee camp in Cox's Bazar by World Food Program (WFP). Most of the natural slopes has been changed. To protect the slope, several measures was taken as ad-hoc basis.

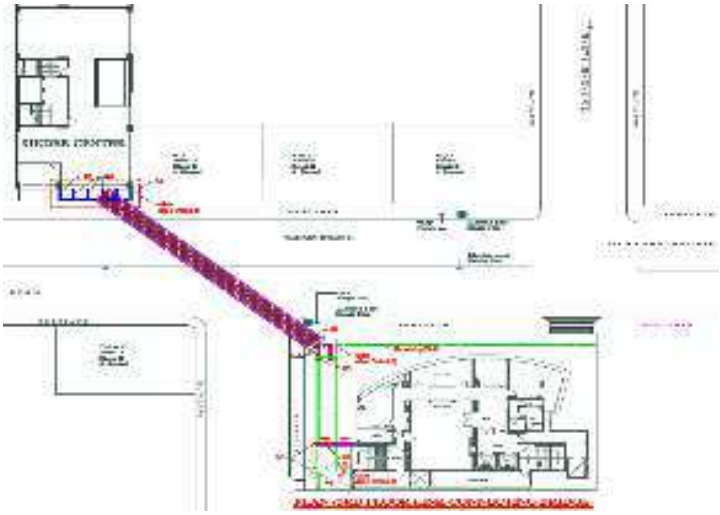




CONNECTING FOOT OVER BRIDGE BETWEEN SIKDER CENTER & SIKDER HAUS.

- Connecting walking bridge design with conceptual design and detail design drawing between sikder center and sikder haus.





CONSULTANCY SERVICE FOR DESIGN REVIEW CONNECTING BRIDGE FOR ARKAY KNIT DYEING MILLS LIMITED AT ZEERANI BAZAR, KASHIMPUR JOYDEVPUR, GAZIPUR, BANGLADESH.

- The main detail design review of steel connecting bridge as per BNBC 2020.
- Steel connecting checking as per the code specified.
- Preparation of all revised detail drawings for construction.


SEPTEMBER | 2023

THE FOCUS OF OUR COMPANY IS OUR PEOPLE

EIMS
ADVISORS

- **Ainun Nishat, PhD**
  Advisor, Climate Change and Water
- **Mohammed Hossain, PhD**
  Advisor, Ground Water Resource Assessment
- **M. Aminul Islam, PhD**
  Advisor, Urban Institution and Climate Change Policy
- **Md. Abdul Mannan, PhD**
  Advisor, Metologist Weather Modeling and climate change
- **Wahid Palash, PhD**
  Advisor, Morphology and Hydrology Modelor
- **Partha Das, P.Eng.**
  Advisor, Industrial Structure

Advising for capacity building

Environment Division

Syed Ahsanul Haque

Head of Environment and Business Development

Syed Ahsanul Haque Rubel, B.Sc. in civil engineering and MSc in Disaster Management from the University of Dhaka, having more than Twenty (20) years of working experience in the field of Disaster Management and Climate change related projects with combination of GIS/RS application. He has been working as a Head of Environment division of EIMS since November 2015 mainly involved in different projects like Solar power plant feasibility study, Water and sanitation related Projects in different parts of Bangladesh. His expertise in the Hydrology, Integrated Water Resources Management Project (IWRM), topographic survey with good knowledge on different kinds of survey equipment like DGPS, RTK, Total station, Leveling instrument etc.

During these periods he worked in EGIS-II, CEGIS, Swiss Red Cross in many Government and donor funded projects. He has developed and set up Community based Flood Early warning Dissemination system for both Riverine and Flash ood, Strong hydrological and meteorological data analysis capacity and developing multi-hazard maps, Risk and resource maps, tool development for different project through GIS and Remote sensing technology

Dr. Mohammad Abul Fazal

Ground Water Modeling Expert

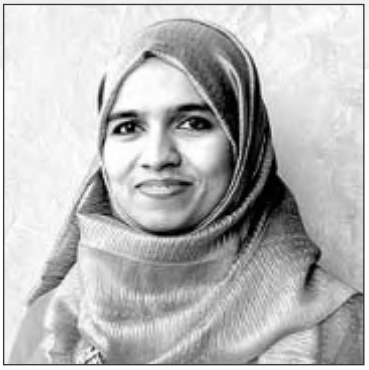
Dr. Mohammad Abul Fazal is a highly accomplished groundwater expert with a Doctorate Degree in Groundwater Management from Kyoto University, a Master of Science Degree in Hydrology from the National University of Ireland, and a Bachelor's Degree in Irrigation and Water Management Engineering from Bangladesh Agricultural University. He has received prestigious scholarships from the Japanese, Irish, and Bangladeshi governments to support his studies. With over 30 years of experience, he has worked in various consulting firms and public organizations across Bangladesh, Japan, UK, and the Middle East, specializing in groundwater modeling, hydrogeology, hydrogeochemistry/groundwater quality, and irrigation water management. Currently, he serves as a Groundwater Modelling Expert at EIMS in Dhaka, Bangladesh, and has previously held notable positions in organizations such as Mott MacDonald Ltd., Hyder Consulting, and Faber Maunsell. Dr. Mohammad Abul Fazal has also made significant contributions to the field through his 29 publications in national and international journals.

Iffat Huque

Environmental Specialist

Ms. Iffat obtained her MSC degree in Environmental Assessment from Concordia University, Montreal, where her specialization was in EIA- Concepts, Principles and Practice, Data Collection and Analysis, Environmental Economics, Environmental Law, GIS and Remote Sensing application for EIA. She has more than thirty year's working experiences in Bangladesh in the field of Water and Environmental Sector and she is considered one of the pioneers of Remote Sensing application in many development projects since 1988 through which she possesses profound knowledge on GIS/Remote Sensing. She worked in many projects of the trust organization under the Ministry of Water Resources of Bangladesh and also UNDP/Dutch funded projects.

Environment Division



Tanjiba Rahman

Specialist, Environment and Disaster Management

Ms. Tanjiba Rahman has been working in different projects of environment and disaster management for about 8 years. In her professional life she has been involved in different projects related to water resource management, vulnerability and risk assessment, disaster risk reduction and so on. She has good knowledge in different tools of GIS and is an expert at applying GIS tools and techniques for different types of analysis. She has publications in both national and international journals.

Mahmida Tul Urmi

Associate Water Resources Engineer

Mahmida Tul Urmi has been completed her BSC in Civil & Environmental Engineering from Shahjalal University of Science & Technology and also pursing her MSC in Water Resource & Development from Institute of Water & Flood Management (IWFM), BUET. For the last 5 years she has been involved in different projects related to Water Resource Management especially in River & Coastal Morphology, Hydrology and Climate Change and its Impact on Water Resource. Her Specific job responsibilities were developing 1D/2D hydrodynamic model (HECRAS, Delft3d) of River and coastal region of GBM delta and the evaluation of statistical & hydrological analysis to provide the best solutions for design value of the project.

Md. Hasibuzzaman

Sr. Executive Engineer, Civil

Md. Hasibuzzaman is working as Civil & Environment Engineer for about 6 years. He is working as a team leader for field work supervision, data collection and formatting, team co-ordination in various projects run by EIMS. He is interested in soil investigation, civil construction, environment and WASH facilities improvement and so on. His expertise in construction monitoring, SPT test of soil and WASH facilities with water quality monitoring.

Muhammad Tarek Mahmud

Environment Engineer/WASH Specialist

Muhammad Tarek Mahmud obtained his B. Sc. Degree in Civil and Environmental Engineering from Shahjalal University of Science and Technology, Sylhet. He has 9 years' experience in WASH and construction. Currently he operates UNICEF Life Saving WASH program in refugee camp and host community, Cox's Bazar. Also he performs WASH gap analysis in camp, GIS, construction supervision.

Environment Division

Abdulla Al Mamun

Environment Engineer / WASH Specialist

He completed his B. Sc. Degree in Civil and Environmental Engineering from Shahjalal University of Science and Technology, Sylhet. He is working on WASH and construction since 8 years. Currently he leads UNICEF host community project, Cox's Bazar.

Aliya Zaman

Economist

Ms. Aliya Zaman has done her M.Sc. in Economics. She has been working in different projects of environment and social management for 5 years. In her professional life she has been involved in different projects related to economic analysis and so on.

Tasnuba Chowdhury

Associate Water Resources Engineer

Tasnuba Chowdhury, BSc in Civil and Environmental engineering from MIST and MSc in Water Resources Engineering from BUET, has been working in different government projects of Environment and Water Resources management. She has also good knowledge in different tools of GIS, and is expert at applying GIS tools and techniques for different types of analysis. She has adequate knowledge of hydrological modelling. She has also publications related to this sector. Currently she is developing Ground Water assessment model for BWCSRP project of BWDB.

Jannatul Ferdous Eva

Assistant Water Resource Engineer

Jannatul Ferdous Eva has been completed her B.Sc. in Civil & Water resources Engineering from from Military Institute of Science & Technology and also pursing her MSC in Civil & Water resources Engineering from MIST. She has interest in hydraulic modelling and morphological analysis. She is experienced in GIS based remote sensing, morphological analysis and softwares like HEC-RAS, HEC-HMS. Currently she is developing Groundwater model for BWCSRP project of BWDB.

Environment Division

Najmus Sadat Khan

Assistant Water Resource Engineer

Najmus Sadat Khan completed his B.Sc. from Military Institute of Science & Technology, Dhaka. He has a keen interest in hydrological and hydraulic modelling as well as spatial data analysis and prediction. He has experience on GIS based remote sensing and flood modelling and software like HEC-RAS, HEC-HMS, EPASWMM, Water GEMS. He has done training on ArcGIS. Currently he is developing salinity intrusion model for BWCSRP project of BWDB

Md Tanvir Alam Tarafder

Assistant Water Resource Engineer

Md Tanvir Alam Tarafder holds a Bachelor of Science degree in Civil and Water Resources Engineering from Military Institute of Science and Technology (MIST). He possesses a strong understanding of various fields such as hydrology, flood management, drainage engineering, morphological analysis, and environmental impact assessment. He has experience in hydrologic and hydraulic modeling, utilizing software tools like HEC-HMS, HEC-RAS, and GeoSWMM. He is also proficient in ArcGIS and remote sensing applications, particularly in water resources. With his diverse skill and extensive knowledge, he is well equipped to tackle challenges in the field of water resources engineering sector.

Md Rokonuzzaman

Assistant Water Resource Engineer

Md Rokonuzzaman have successfully completed his Bachelor of Science degree in Civil and Water Resources Engineering from Military Institute of Science & Technology. He possesses a keen interest in hydrological and hydraulic modeling, with a particular focus on developing hydrodynamic morphological models. Additionally, he has hands-on experience in GIS-based remote sensing work and flood modeling. His expertise lies in utilizing tools such as HEC-RAS, HEC-HMS, SWMM, AutoCAD, ArcGIS, Delft3D, and Python for data processing. Presently, he is actively engaged in the development of a morphological prediction model in Delft3D for the BWCSRP project of BWDB.

Jannatara Mousumi

Hygiene Officer

Jannatara Mousumi completed her BBA from National University. She have 5 year experience in hygiene promotion, child protection and women empowerment. Now she working in UNICEF Lifesaving WASH program at refugee camp as hygiene officer and also analyze hygiene assessment need in Rohynga camp, Cox's Bazar.

Environment Division

Tahera Begum

Hygiene Officer

Tahera Begum completed her Masters of Social Science from University of Chittagong. She have 4 year experience in hygiene promotion, child protection and women empowerment. Now she working in UNICEF Lifesaving WASH program at refugee camp as hygiene officer and also analyze hygiene assessment need in Rohynga camp, Cox's Bazar.

Md. Rafiqul Islam

Civil Engineer

Md. Rafiqul Islam completed his B. Sc. In Civil Engineering from Stamford University Dhaka. He has 4-years' experience in WASH infrastructure construction design and supervision. He successfully completed UNICEF and Bangladesh ARMY project, DPHE-UNICEF water distribution network project in Rohynga refugee camp, Cox's Bazar Now he working in UNICEF host community project in Chakoria.

Design Division

Dr. Md. Monjur Hossain

Advisor (Structural Design)

Md. Monjur Hossain, PhD in Civil Engineering has a long experience in detail structural engineering for over 45 years. He has profound knowledge in geotechnical engineering and an expert in risk sensitive structural design as well as foundation design. He has in-depth knowledge in national and international code compliance in structural design, construction and maintenance. He has experience in conducting large civil engineering projects which includes the structural and foundation design of tall buildings. He has a long experience in teaching profession and has a good number of research works. He has many publications in different national and international journals. With his strong technical expertise, he excels in project management, showcasing excellent interpersonal communication skills and efficiently coordinating with both the working team and clients.

Samy Muhammad Reza

Senior Structural Engineer & Engineering Quality Control

Samy Muhammad Reza is an accomplished civil engineer with a strong academic background and extensive professional experience in the field. He holds master's degrees in Civil Engineering from the University of British Columbia and Bangladesh University of Engineering and Technology (BUET), specializing in seismic performance and dynamic behavior of bridges. He has led design teams for various bridge projects in Bangladesh, Nepal, and Bhutan, including the design and construction supervision of significant bridges. He has also been recognized for his research contributions to bridge engineering. His expertise and leadership make him a highly skilled engineer in the field.

Abdul Siddik Hossain

Head of Design & Geotechnical Engineering

Abdul Siddik Hossain is working as Structural Engineer for about 12 years. He has experience in structural analysis, seismic retrofitting of existing buildings through structural integrity assessment. He was a qualified structural lead assessor of Alliance for Bangladesh Worker Safety, worked for improving worker safety and upgrading RMG factories. He successfully conducted Initial Structural Integrity Assessment of several RMG factories all over Bangladesh. He is interested in earthquake resistant building design for both RCC and Steel Structures. He has sound knowledge in some finite element software such as Csi ETABS, SAP 2000, SAFE, ABAQUS 6.13, PLAXIS 2D, etc. He has also a good command in drafting using AutoCAD.

Khandaker Mahedi Hasan

Deputy Head of Design & Structural Engineering

Khandaker Mahedi Hasan is a skillful professional Structural engineer. He has the professional experience for 10 years and has gained vast knowledge and work experience on Assessment of Factory Buildings, retrofitting design with complete detailing and feasibility analysis of multi storied buildings, Detail Engineering Assessment of Single Storey Steel Roof Shed, Seismic Risk Mitigation through Retrofitting of Civil Infrastructure, structural and Fire Safety Assessment of ReadyMade Garments and so on.

He is mainly an expert in some finite element software such as CSI ETABS, SAP 2000, STAAD.Pro, CSI SAFE. He has a good hand in drafting using AutoCAD for any critical drawing. He has good knowledge of the Microsoft Office Software Package.

Design Division

Md. Ashraful Alam

Superintending Structural Engineer

Md. Ashraful Alam is a highly skilled Structural Engineer with over 9 years of experience. His expertise includes structural analysis, integrity assessment of RMG buildings, and seismic retrofitting of existing structures. He specializes in earthquake-resistant design of RCC, Steel, and Composite Structures, utilizing software such as Csi ETABS, Staadpro, SAP 2000, SAFE, Staad Foundation, Ram Connection, and Idea Statica. Ashraful has successfully designed high-rise buildings, as well as structures such as RCC and Steel Frames, Gable Frame roof sheds, and Shear Wall Structures.

In addition to new structural design, he has a comprehensive understanding of assessing and evaluating the performance of existing structures, along with expertise in building codes such as BNBC, ASCE, ACI, and AISC.

Syed Shakib Al Muiez

Senior Structural Engineer

Syed Shakib Al Muiez, a highly skilled Structural Engineer with 9 years of experience, has expertise in diverse areas of Civil and Geotechnical Projects. He excels in Detail Engineering Assessment (DEA), including retrofitting design, initial structural integrity assessment, seismic vulnerability assessment, building and material testing, structural engineering, lifeline engineering, and cost estimation. Syed is proficient in various Finite Element Modelling software such as CSI ETABS, SAP 2000, and SAFE. He has also completed specialized training in the geotechnical engineering simulation software PLAXIS 3D in Singapore. With in-depth knowledge of international codes such as ASCE 41-13, ATC-40, FEMA, and ACI, he is well-equipped for seismic vulnerability assessment and retrofitting design.

Md. Mohan Ali

Senior Structural Engineer

Md. Mohan Ali is a professional Structural engineer. He has the professional experience for 6 years and he has work experience on Assessment of Factory Buildings, retrofitting design with complete detailing and analysis of multi storied buildings, Detail Engineering Assessment, Static and Dynamic Analysis and Design of Reinforced Concrete Structure, Structural Safety Assessment of Ready Made Garments (RMG). He has conducted researches on the comparison of three versions of BNBC 1993, 2006 & 2014; Structural Response of Coastal Wooden Infrastructure to Cyclonic Wind and Surge Induced Thrust Force. He can perform well both as an individual and as a group member.

Azam Ahmed Oli

Executive Engineer, Geotechnical

Azam Ahmed Oli is a professional Geotechnical Engineering. His professional experience is more than 8 years. He is working within a fast-paced and thought-provoking sphere. He has worked diligently towards multiple projects within a variety of sectors, including government, RMG, industrial, residential, and NGOs. Acquired experience in analyzing and designing foundation, assessing geotechnical and seismic hazard due to liquefaction, amplification, land slide etc. Assessing for slope stability, designing of earth retaining structure, soil improvement design etc. Also attained competent knowledge in several codes such as BNBC, ASCE, ACI, AISC, AASHTO etc. Static and Dynamic Analysis and Design of RCC and Steel Structure.

Design Division

Inzamam Ul Kabir Priom

Assistant Structural Engineer

Inzamam Ul Kabir Priom is a skilled professional structural engineer specializing in structural analysis, design, detailed engineering assessment, and retrofitting design. He has expertise in interpreting and applying relevant building codes, standards, and regulations to ensure compliance and adherence to safety guidelines. In addition, Inzamam has extensive experience in conducting structural inspections and site visits, ensuring construction quality and adherence to design specifications.

Md Samiul Alam Shohag

Assistant Structural Engineer

Md Samiul Alam Shohag is a Professional Structural Engineer have a total experience of 4 years in the field of Analysis & Design of both RCC and Steel Structures, Planning & Execution of Residential, Commercial & Industrial Buildings. Skilled in ETABS, CSiCol, SAP200, SAFE, STAAD.Pro, STAAD Foundation Advanced, AutoCAD. He has expertise in interpreting and applying relevant building codes, standards, and regulations to ensure compliance and adherence to safety guidelines.

Md. Moshiur Rahman

Assistant Structural Engineer

Md. Moshiur Rahman, a recent graduate from North South University with a degree in civil engineering, is a promising young assistant structural engineer. His academic journey has equipped him with a solid foundation in structural analysis and design. Moshiur's dedication to staying updated with industry trends and gaining hands-on experience through internships showcases his commitment to excellence. With a strong work ethic and attention to detail, he is poised to contribute effectively to structural engineering projects, making him a valuable addition to any team. Moshiur Rahman is ready to embark on his engineering career, eager to tackle challenges and make a meaningful impact.

Md. Sakaoath Hossain

Assistant Structural Engineer

Md. Sakaoath Hossain, a recent graduate from Ahsanullah University of Science and Technology with a specialization in structural engineering, is a promising assistant structural engineer. His thesis work demonstrates his deep understanding of the field, making him well-equipped to tackle complex structural challenges. He is passionate about innovative solutions and commitment to excellence are evident in his academic achievements. With a fresh perspective and a strong foundation, he's poised to make a significant impact in the world of structural engineering, contributing effectively to projects and advancements in the industry.

Design Division

Md. Fazlul Haque

Executive Engineer, Electrical

Md. Fazlul Haque is a qualified, efficient and self-motivated Electrical Engineer. He has a professional experience of more than 5 years. He has a wide range of experience in the erection and commissioning of power connection-related work of both residential & industrial buildings, electrical works inspection as per international standards, and drawing of electrical layouts. He is working on preparing electrical layout drawings of factory buildings with the collaboration of the EIMS design team. He is an expert in drafting software such as AutoCAD (2D and 3D), AutoCAD Electrical, PPM using Microsoft Project etc. He has the capability to do any erection, commissioning, inspection, drawing and simulation work under pressure.

Mohammad Ashabul Haque

Superintending Electrical Engineer

Mohammad Ashabul Haque is an experienced, self-motivated and efficient electro-mechanical engineer. He obtained BSc in Mechanical Engineering from Military Institute of Science and Technology and MSc in Electrical and Electronics Engineering from North South University. He has more than 10 years' experience in the sector of transformer manufacturing, electrical substation design and installation, ISO 9001 audit, project management, plant management, risk and impact analysis and so on. He also has knowledge and experience in the field of HVAC design, solar plant design and installation, process development and business development. He is also capable to perform the audit related activities.

Shamim Azad

Senior Architect

Shamim Azad is a highly skilled and experienced architect. He obtained his degree from Bangladesh University of Engineering and Technology (BUET) and is a full member of the Institution of Architects of Bangladesh (IAB). For over12 years, Shamim has dedicated his career to the architecture industry. His main expertise lies in designing high-rise buildings for both residential and commercial purposes. He is particularly proficient in designing large industrial buildings and creating industrial masterplans. Additionally, Shamim possesses a strong knowledge of technical and construction details. He is also an expert in interior design, complex 3D modeling, rendering, and the latest advancements in virtual reality technology. He is also highly proficient in interior design, complex 3D modeling, rendering, and keeping up with the latest advancements in virtual reality technology. His expertise extends to software such as AutoCAD, Rhino, Lumion, and Unreal Engine.

Mahmudul Alam Rashed

Associate Architect

Mahmudul Alam Rashed is an enthusiast, energetic and skilled architect with an experience of more than 6 years in the professional field. He is a member of Institute of Architects Bangladesh and has keen knowledge on wide range of projects both exterior and interior as well as industrial and commercial developments. He is a very good team player and has the ability to lead a team and coordinate with clients, engineers and also with on field workers. His expertise is on design planning and coordination. He has strong efficiency on Autocad, sketch up, Revit Architecture, Lumion, Enscape, Vray and Adobe creative softwares for creating design and 3d visualization. He also has experience on various large scale master planning projects.

Design Division

Zannatul Naim

Assistant Architect

Experience of taking part in the architectural designing process with respect to building laws and regulations for construction of infrastructure. Having knowledge about sustainable green architecture, good command over AutoCAD, Sketch up, Photoshop, CorelDraw, Lumion software.

Bony Yeamin

Junior Architect

Experience on Visual appearance of the buildings and structures before final structural design with respect to building laws and the regulations. Good knowledge of methodological Analysis on Implementation of Housing and Architecture for Green Living in combination with Auto Cad, sketch up pro, Photoshop and Corel draw software.

Md Sohel Rana

Assistant Draftsman

Md. Sohel Rana is working in Environment and Infrastructure Management Solution (EIMS) Limited as Assistant Draughtsman/CAD Operator from November 2023.His professional experience is more than 5 years. He has completed Diploma in Architecture from Naogaon Gov. Polytechnic Institute on 2014.He is expert at Architectural, Structural (Steel, RCC). As built, Retrofitting drawing (any kinds of buildings) with the collaboration of EIMS design team.

Mizanur Rahman

Assistant Draftsman

Mizanur Rahman has been serving as an Assistant Draughtsman/CAD Operator at Environment and Infrastructure Management Solution (EIMS) Limited since November 2016. He holds a Diploma in Civil Engineering, which he completed in October 2014 at Palashbari Polytechnic Institute in Gaibandha. In his current role, Mr. Mizanur is responsible for preparing as-built drawings of factory buildings and collaborating with the EIMS design team on retrofitting working drawings. He possesses expertise in drafting software, including AutoCAD (2D and 3D), 3D Studio Max, and utilizes Microsoft Project for PPM (Project Portfolio Management).

Design Division

Ashrafuzzaman

Assistant Draftsman

Ashrafuzzaman Dipu is currently working in Environment and Infrastructure Management Solution (EIMS) Limited as Assistant Draughtsman/CAD Operator from March 2023. Ashrafuzzaman Dipu has completed Diploma in Architecture Engineering from SAIC Institute of Management & technology June 2011. He is working for preparing the Architectural, Structural drawing, as-built drawing of factory buildings, retrofitting working drawing with the collaboration of EIMS design team _ He is expert in drafting software such as AutoCAD (2D and 3D), Sketch up & max interior, exterior design, rajuk, approval drawing, pourosova approval drawing sheet prepared, structural drawing, plumbing, electrical layout plan, photoshop & illustrator, etc.

Md Mehedi Hasan

Junior Draftsman

Md. Mehedi Hasan is currently working in Environment and Infrastructure Management Solution (EIMS) Limited as Junior Draughtsman/CAD Operator from September 2022. Md. Mehedi Hasan has completed Diploma in Civil Engineering from Naogaon Polytechnic Institute,Naogaon on 2018. He is working for preparing the as-built drawing of foctory buildings, retrofitting working drawing with the collaboration of EIMS design team. He is expert in drafting software such as AutoCAD (2D and 3D), 3D Studio Max, SketchUp,PPM using Microsoft Project, etc.

Sohag Shakil

Junior Draftsman

Sohag Shakil is a Junior Draughtsman/CAD Operator at Environment and Infrastructure Management Solution (EIMS) Limited. He holds a Diploma in Engineering from Thakurgaon Polytechnic Institute, which he completed in October 2021. In his current role, he is responsible for preparing various types of drawings, including Architectural, Structural, and as-built drawings for factory buildings. He also collaborates with the EIMS design team to create retrofitting working drawings. Sohag possesses expertise in several drafting software programs, including AutoCAD (2D and 3D), Revit Architecture, 3D Studio Max, and PPM using Microsoft Project. With his skill set and experience, he contributes to the efficient execution of projects and the accurate representation of construction designs.

Geotechnical lab:

We have 6 geotechnical lab engineers and 10+ lab technicians ensuring quality testing.

Construction Division

A.T.M. Zaheed Islam

Head of Construction Division

A.T. M Zaheed Islam is a professional Construction Engineer in the field of Civil Construction work having more than twenty-nine years' of experience in both home and abroad. He was engaged in the construction of various projects like High-rise Building(City Centre,37 storied Commercial Building at Motijheel),International standard Hospital(Square Hospital at Panthapath), Hotel extension project(Hotel Sheraton at Mintoo Road),Power Plant (100MW power Plant at keraniganj of Sikder Group),High quality Apartments at Gulshan and Banani (made by Comfort Living Ltd.), Large quantity Water reservoir(in Makkah,KSA),Service Apartment with 4 basement and Doreen Tower (made by Doreen Group at Gulshan-2),Commercial High rise Platinum rated Green Building Saiham Tower (made by Saiham Group at Gulshan-1.

Md. Ashraful Islam (Ashraf)

Executive Engineer, Civil

Md Ashraful Islam working at Environment and Infrastructure Management Solution(EIMS) Limited as a BOQ & Estimate Engineer, Construction Division. He has experienced of more than ten years on Detail Engineering Assessment of multi storied garments factory & residential buildings, new construction supervision, and BOQ & Estimation works. Recently he has completed Detail Engineering Assessment of UNICEF-05 project, and which BOQ work is ongoing. Also some large retrofitting RCC & Steel BOQ are submitted among them. Delta Marriott, Sikder center bridge, LGED Kamalnagar Upozila Complex, Laxmipur, Anowara Cotton Ltd, ICONIC TOWER SIKDER piling, Kwun Tong, Unicef WTP pipe project, UNICEF-05 project, are remarkable.

Md. Imran Hossain

Mechanical Engineer

Md. Imran Hossain is a skillful professional Mechanical Engineer with vast knowledge. His has been working for 7 years on his profession and he has gained knowledge and work experience on maintenance, servicing, operation of all mechanical heavy equipment particularly hydraulic machinery, mechanical drawing using solid works software as well. He has been working for 4 years on jet grouting system with other mechanical and minor electrical trouble shooting solution. Before joining this company, he has worked at Anon Tex group (power generation section) and shohag group (Automobile section).

Abdullah Al Mahmud

Quality Manager-Civil Engineer

Abdullah Al Mahmud is currently working in Environment and Infrastructure Management Solution (EIMS) Limited as Quality Manager-Civil Engineer. He has completed B.Sc. in Civil Engineering from Chittagong University of Engineering and Technology (CUET) April 2016.Abdullah Al Mahmud plays a crucial role in upholding quality standards and ensuring that construction projects are executed in compliance with UNICEF, IDB, WB and industry best practices. He has strong knowledge in civil Engineering Principles, Construction methods, materials and proficiency in using quality control tools, software, and documentation systems. He is also familiar with building codes (BNBC, ACI), regulations, and standards. He has Effective communication and interpersonal skills to collaborate with project teams, subcontractors, and suppliers and Project management skills to plan, organize, and coordinate quality control activities.

We also have more than 11 field engineers working on different projects.

CLIENTS


LGED


DHAKA
DCC
ঢাকা


বাংলাদেশ
উন্নয়ন কর্তৃপক্ষ


বাংলাদেশ
পানি উন্নয়ন বোর্ড


ALLIANCE


EPIC
GROUP
World class manufacturing Cutting edges solutions


IWM
Water Environment & Climate


JICA


Kenpark


ACCORD


GOLDTEX


PACIFIC
JEANS


BANGLADESH RED
CRESCENT SOCIETY


RIVERSIDE


Lenny Fashions Ltd.
Bangladesh


Moonlight
Garments Ltd


Palmal
Group


UNIQUE


Universal
Jeans
Limited


MBM


UTAH


YOUNGONE
BANGLADESH


ELL
GROUP


LAILA GROUP


Univogue Group


adams apparels


clifton
GROUP


GeoGroup


Levi's


DEKKO ISHO
GROUP



OUR SISTER CONCERN

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