
**ARC TECH ENGINEERING & CONSULTING**

**Dhaka Office:**
**House # 25/2, Road # 28 (old), Dhanmondi, Dhaka-1209, Bangladesh**

**Khulna Office:**
**NLI Tower (2nd Floor)**
**977, Upper Jashore Road, KDA Newmarket, Khulna-9100, Bangladesh**

**Email: info.arctech.bd@gmail.com, Website: www.arctechbd.com**
**Phone: +88 01400-491492 (Whatsapp)**

# Company **Overview**

**ARC TECH** is an integrated Engineering Design and Consulting firm based on Electro Mechanical Engineering & Structural Engineering Service. We offer innovative design, execution and delivery solutions to its clients in multiple sectors for projects of scale and complexity, whilst managing diverse technological interfaces. **ARC TECH** would ensure quality services within the budget limitation of a client and is committed to completing of the task within the stipulated time frame to check escalating cost. We undertake the responsibility to satisfy the client's demands to its highest standards.

**ARC TECH** emerged on July 1, 2015 with the central objective of supporting public and private sector utility entities to meet the growing energy needs with expert consultations. **ARC TECH** provides different client services in Project Management, Design & Engineering, Construction, Installation and Testing subject to project requirements of Electro-Mechanical work in Power & Energy Sector as per IEC, NFPA & International standard.

At **ARC TECH,** safe working practices are at the center of our operating philosophy. We are committed to executing projects and delivering value to our clients within the parameters of the highest quality and best industry practices according to health and safety standards.

# Our **Vision** & **Mission**

Our Vision is to be the best-in-class integrated engineering consultancy, management services and construction services provider executing projects to world-class standards for our customers and delivering industry-benchmarked value to our client's expectation.

Our Mission is to deliver the State of Art Engineering solutions, which are innovative, safe, cost effective, energy efficient, affordable, environment-friendly, technically superior and upholding top-tier quality with ethical standards to clients, in the power and energy business at home and abroad. We also focus to -

- **Power & Renewable Energy**
- **Infrastructure & Transport**
- **Water & Environment**
- **Hospital & Healthcare**

# Our Core **Values**

We believe in quality being a continuous process and routinely conduct on-site awareness programs to retain this focus in our project delivery processes. We are focused on delivering value to our customers at every stage of the project. We want to achieve this with our continuous commitment towards:

**Respect for our people**
We encourage our people to learn and empower them to innovate. We set objective performance measurement criteria to track both individual and project progress

**Respect for the environment**
We aim to conduct our operations with minimum damage to the environment and optimum energy consumption, keeping waste creation to the minimum.

**Safe operating practices**
We believe every incident prevented is potentially a life saved. We encourage safe operating practices through continuous training and awareness programs.

**Delivering competitive solutions**
We strive to delivered competitive solutions to meet our customers' expectations and we take pride in delivering quality on time to our customers.

# Particulars **of** the **Company**

| | | | |
|---|---|---|---|
| 1 | **Name of the firm** | : | **ARC TECH Engineering & Consulting** |
| 2 | **Type of Business** | : | Engineering & Consulting Service |
| 3 | **Registered Address** | : | **Dhaka Office:** House # 25/2, Road # 28 (old), Dhanmondi, Dhaka-1209, Bangladesh<br>**Khulna Office:** NLI Tower-3 (2nd Floor)<br>977 Upper Jashore Road, Khulna-9100, Bangladesh |
| 4 | **E-mail & Phone No.** | : | Email: info.arctech.bd@gmail.com<br>Website: www.arctechbd.com<br>+88 01400 491492 (Hotline) |
| 5 | **Country of Incorporation** | : | Bangladesh |
| 6 | **Year of Establishment & Ages** | : | 2015 (10 Years) |
| 7 | **Trade License No.** | : | 21/9038, Khulna City Corporation, Bangladesh |
| 8 | **Company Registration** | : | This firm was established in 2015 and registered RJSC as a Firm. Registration number 17/1846. Then the firm was reorganized and re-registered in RJSC on 2021 as Partnership Firm, Registration No. KHP-451-2021 of 2021, Registration number 21/9038 |
| 9 | **Income Tax Registration** | : | TIN 1990-7372-4168 |
| 10 | **Value Added Tax Registration** | : | BIN 006326719-0801 |
| 11 | **Registration & Enlistment** | : | ARC TECH has registered in Following National and International Agencies;<br>• Asian Development Bank (ADB) CMS No. 039286<br>• External Resources Division of Government of Bangladesh<br>• Member of Bangladesh Association of Consulting Engineers (BACF) which is affiliated to FIDIC<br>• Khulna Development Authority (KDA), Enlistment No. Ka-42 |

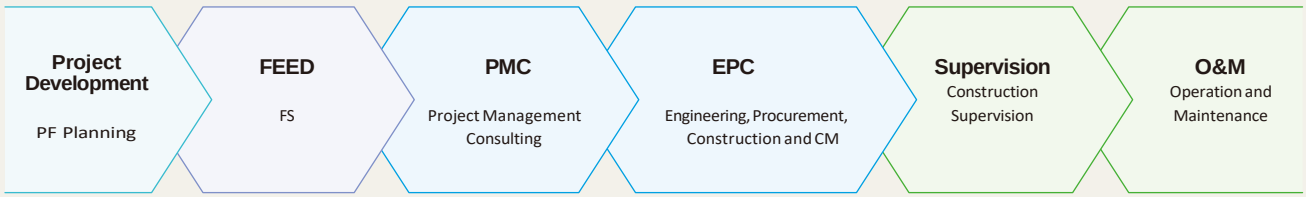
# Message from Our **Managing Director**

Our Managing Director Engr. Mukit Hasan has completed his graduation in Mechanical Engineering from Bangladesh University of Engineering & Technology (BUET). He has Professional Experience around 20 Years of Mechanical construction and engineering in Power, Oil & Energy including LPG Sector both in home and abroad. During the tenure of his professional service he has worked in different Multi National Power Generation Service Company i.e. Wartsila & Caterpiller and private power companies as Superintendent Engineer in the field of construction to develop large capacity Power Plant Projects including HFO Fired Engine based power plants. He also has worked in different Management positions of Power, Energy & LPG sector and contributed his expertise in relevant fields of Bangladesh. He also advised a number of private sector companies of Engine based power plant & LPG Plant Projects.

Mr. Mukit Hasan has extensive training in relevant areas such as Power & Energy Sector, Public-Private Partnership, Heavy Construction Sector, Energy & Utility Regulation, Power Distribution System Development, Oil & Petroleum Sector and Operation & Maintenance.

# Our **Services**

**ARC TECH** has established a reputation for providing high-value engineering solutions and assisting sophisticated engineering design in the competitive market. Over the years, this reputation has been developed by building a wealth of experience and engineering capabilities across various industries, working with oil and gas operators, pharmaceutical, mining, and various domestic infrastructure projects.




**ARC TECH** has detailed design capability across all engineering and construction works. These processes ensure strict compliance with code requirements ensuring designs are fit for purpose, are fully optimized, and reflect our approach to engineering.

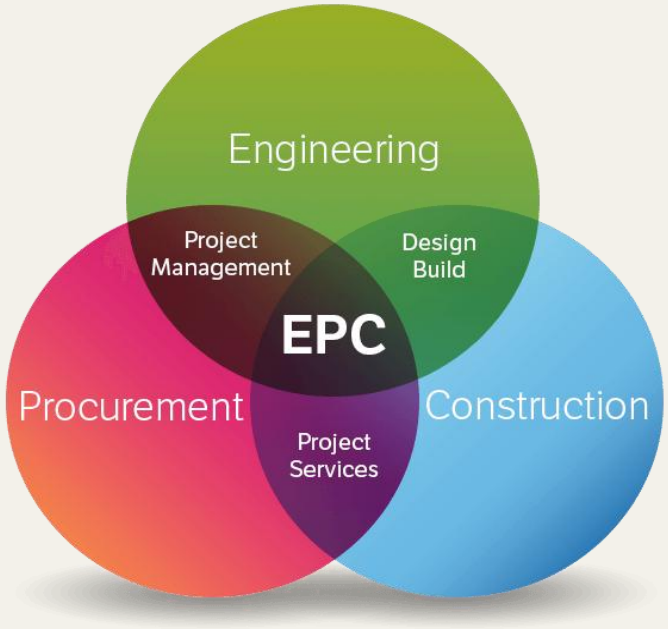
- Front End Engineering Design (FEED)
- Details Mechanical, Electrical & Plumbing Design Work
- Owner's Engineers
- Architectural Design & Structural Engineering
- Road Design & Construction Management
- Pre-Feasibility/Fatal Flaw Analysis Studies
- Techno-Economic Feasibility Study
- Renewable Energy Consultancy
- Project Management & Supervision
- Operation & Maintenance Work
- Feasibility Studies of Solar Based Power Plant

**ARC TECH** specializes in the provision of technical assistance, feasibility study, design, construction supervision, and project management for clients in the governmental, semi-governmental & private sectors and offers comprehensive packages of services to its clients in various fields like institutional development, organizational support & monitoring, electro-mechanical engineering, water management system design, flood control & irrigation engineering, project feasibility study, regional planning, etc.

# Front **End** Engineering **Design (FEED)**

**ARC TECH** optimizes concept designs through Front End Engineering Design (FEED) projects, enabling clients to make sound investment decisions and execute projects with minimal technical, cost and schedule risks.

We provide informed decision support, cost estimate refinement, detailed project scheduling, and quantitative risk profiling - all of which align with our client's approvals / sanctioning needs. We derive functional requirements for equipment and systems and provide informed support in deriving contracting strategies, collating bidder lists, issuing tender invitations, and performing bid assessments for equipment delivery and installation.




We have extensive experience in various technically demanding national infrastructure projects, together with expertise in a number of niche markets including:

- Onshore Gas / Oil pipelines & LPG / LNG Terminals
- Hydro & Wind Power Plant
- Port and Jetty / support facilities
- Hospital Design & Safe Guards
- High-Rise Building
- Onshore industrial / accommodation / support facilities

## Details **Mechanical, Electrical & Plumbing** Design

***Mechanical Design Work***

- Mechanical Design & Engineering Work
- HVAC System Design & Heating Load Calculation
- Storage Tank Design & Steel Structure Design
- Detail Mechanical and Piping Design
- Process Plant / Equipment Layouts
- Pipe and Pumping System Analysis
- Thermal Power Generation System Design

***Electrical Design Work***

- Electrical Layouts & Module Design
- Utility system and LV Power Distribution Panel
- Engine based Power Generation System
- Energy Storage System for Smart Grid
- Earthing System Design as per as per IEC Standard
- MV & HV Power System
- Power & Distribution System (up to 132kV & 230kV)

***Plumbing and Fire Fighting Design Work***

- Detail Plumbing & Sanitary Design
- Piping & Instrumentation Design (P&ID)
- Fire Fighting System Design
- Pipe Stress Analysis & ASME Pressure Part
- Pressure Piping Design and Registration
- Rainwater Harvesting System

# Owner's **Engineers**

***Project Engineering***

- On Site Survey & Port Inspection
- Site Selection, Geographic Survey
- Engineering and Procurement Assistance
- Agreement and Contract Review
- Preliminary Design and Documentation

***Project Proposal Preparation***

- Detailed Engineering Assessment (DEA)
- Technical Specification, GTP Preparation
- Commercial Proposal Review & Assist Client
- EOI Document Preparation

***Inspection & Regulatory Restructuring***

- Inspection of Passenger Lift, Forklift, Excavator & Wheel Loader, Overhead Crane, Air Compressor, Boiler and Relevant Heavy Equipment on behalf of the Owner.
- Assessment of Regulatory Compliance Requirements.
- Assessment of Present Condition & Asset Valuation.
- Assistance to Regulatory Bodies for Development of Standards, Rules, and Codes

## Architectural **Design** & Structural **Engineering**

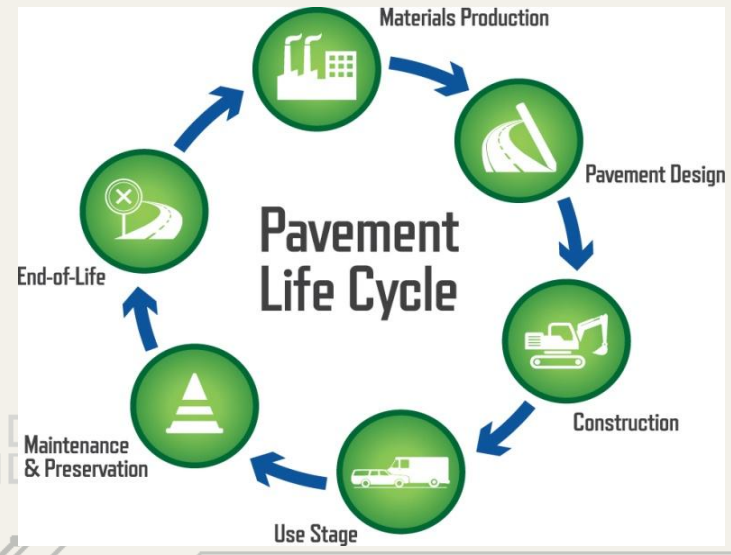
Architectural Design & Structural Engineering is one of the core sides of the company. Our experienced engineers provide full-service and high-value structural engineering design. Our team consists of an expert and engineers that have worked on various technically demanding projects such as large industrial plants, Large Production Sheds and high-rise buildings.

- Design Reviews, Dynamic Analysis and Constructability Reviews
- Warehouse Complexes and Residential building
- Commercial / Industrial building
- Concrete and Precast structure
- Structural Steel Design and Analysis
- Existing Structure Analysis and Review
- Complete Concrete Above & Below-Ground Design Services

## **Road** Design & Construction **Management**

We assist our clients to ensure efficient outcomes for their Road & Highway projects. Our experienced team provides real-world, cost-effective solutions to the everyday challenges that owners and contractors face throughout the Road construction process.

- Review of existing Road engineering data
- Geometric & Pavement Design
- Horizontal and Vertical Alignment, Curve Widening Analysis, Road Prism Stability Analysis, Side Cast
- Slope design, Road Surfacing Design
- Road Construction supervision and quality assurance
- BOQ Preparation, Cost estimating and evaluation



# Pre-Feasibility/Fatal Flaw Analysis Studies

Desk based study will include advice on the possible array size, electrical performance and financial payback while also identifying barriers to the scheme development

- Site and Resource Assessment
- Location/building suitability assessment
- Performance assessment
- Simple financial appraisal and payback calculations
- Undertake an independent environmental and social red flags review of the project against the applicable standards
- Initial flood risk assessment
- Identify any necessary remedial actions with associated timelines and recommendations for follow up work, in order to comply with the applicable standards


## Feasibility Study

***Feasibility Study***

- Techno Economical Feasibility Study
- Financial & Economic Analysis (NPV, BCR, EIRR, FIRR)
- Cost Estimation and BOQ Preparation of the proposed project
- Regulatory Compliance Study and Recommendation
- Electrical Load Profile Analysis for Specific Energy consumption
- Chemical Plant & Fish Processing Plant

***Detailed Project Report Preparation***

- Development Project Proposal (DPP) Document Preparation
- Detailed Project Report (DPR) Document Preparation
- Procurement Plan, Project Implementation
- Project Schedule document preparation

## Project Management & Supervision

***Project Management***

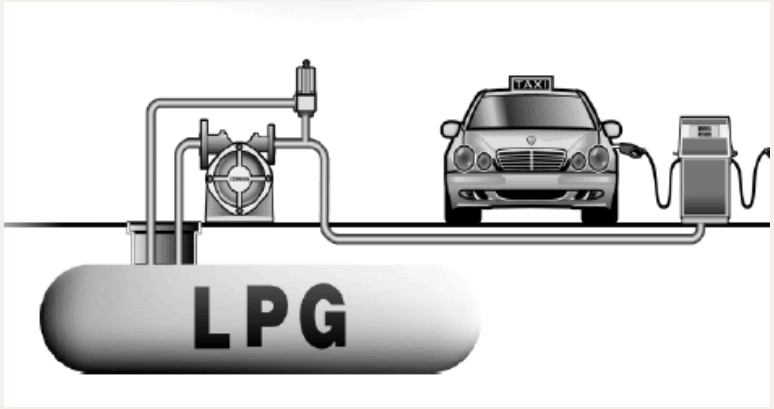
- Procurement & Project Scheduling
- Project Tendering Documentation and Tender Evaluation
- Project Cost Estimating, Business Case Development & Expediting
- Construction Contract Preparation
- Equipment Specification and Procurement

***Project Implementation & Supervision***

- Detailed Engineering Assessment (DEA) document preparation
- Preparation of drawing, Technical Specification, GTP for Govt. Project Proposal
- Project Management & Construction Supervision Work
- Commissioning assistance & Witnessing Performance Guarantee (PG) Test
- Time scheduling, cost control and progress reporting
- Commercial Proposal Review & Assist Client for Proposal

# Renewable Energy Consultancy

**ARCTECH** renewable team of experts focuses on providing customized, innovative, renewable energy and energy efficiency solutions as well as on-going maintenance and support. Our expertise spans across various technologies including:




- Solar Power plant
- Solar PV
- Solar thermal
- Wind power
- Biogas
- Hydropower.

**Service Provided**

- Pre-feasibility/ fatal flow analysis studies
- Feasibility studies of solar based power plant
- High level site solar resource assessment
- Engineering survey support
- Environmental and social impact assessment
- SHS, solar mini-grid system and solar nano grid
- Potential grid connection issues
- Array considerations
- Solar House Hold (SHS)
- Solar irrigation pump
- Floating Solar

**Additional Service Provided**

- Turnkey renewable energy solutions
- Consulting & advisory services
- Energy management programs & training
- Energy efficiency & audits
- Feasibility studies & techno-economic models
- Project management & on-site supervision
- Environmental and Social Study

# Transaction Advisor

***IPP Solicitation up to Financial Closure***


- Preparation of IPP Project Proposal Based on the RFP and Security Packages including Power Purchase Agreement (PPA), Implementation Agreement (IA) for IPP Project.
- Techno commercial analysis for Tariff proposal.
- Preparation of financial model to be used during the tariff and “Security Package” negotiations.
- Development of bid negotiation strategies.
- Preparation of risk allocation matrix.
- Assisting client during “Security Package” negotiations.
- Training of staff of government and/or utility users or sponsors.
- Assisting client in selection of Joint Venture Partner.
- Assist in determination of criteria for selection.
- Assist in invitation of proposals for the prospective.
- Assist in evaluation of partners can select the suitable sponsor.

# Feasibility Studies of Solar Based Power Plant

- Development of site plan and layout up to 100 MWp.
- A conceptual design of the project, including estimation of installed capacity through modeling by estimated energy yields for a number of technologies
- Power off-take options, Transmission line and grid connection, including cost and potential barriers to achieve grid connection
- The cost estimates for development, construction and operation of the project and predicted revenue, based on the available resource data, as well as indicative quotes or comparison with similar projects
- Financial modeling detailing financial assumptions, energy yield, and evaluation of results depending on available primary and secondary data
- Project Structuring
- Preparation of Tender Document and evaluation of EPC Contractor.

## Carbon Trading

- **Emission Reduction Credits**
- **Participation in Voluntary Carbon Markets**
- **International Carbon Standards**
- **Revenue Diversification**
- **Climate Finance Access**
- **Renewable Energy Certificates (RECs)**
- **Local Regulatory Incentives**
- **Corporate Social Responsibility (CSR) Alignment**
- **Long-term Contracts**
- **Global Market Expansion**

# **Feasibility** Studies **of** Power Generation

We bring unmatched expertise in **engineering, EPC, and consulting services**, along with **operations and maintenance** for thermal and biomass power plants. With a strong foundation in the energy sector, our team delivers world-class **EPC and O&M services**, leveraging advanced technologies and patented innovations in **combined cycle power generation, waste-to-energy (WTE), incineration, sanitary landfill, and biomass power generation**.

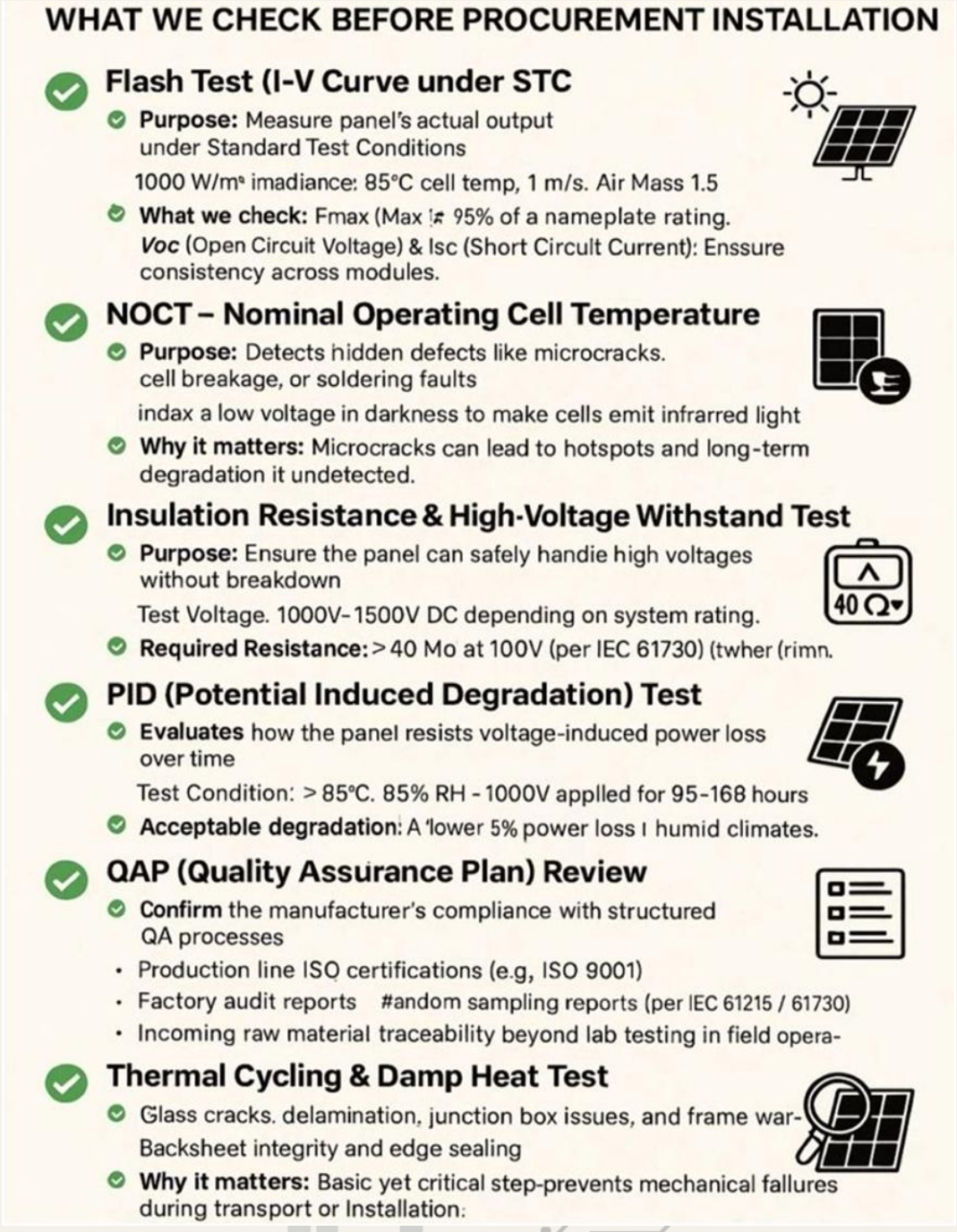
**Our Core Capabilities Include:**

- **Site Planning & Layout Design** – Comprehensive planning and design for power plants up to **200 MW**.
- **Conceptual Project Design** – Capacity estimation through energy yield modeling across multiple technologies.
- **Grid Connection & Power Off-take** – Analysis of transmission line integration, cost structures, and overcoming potential barriers for successful grid connection.
- **Cost & Revenue Assessment** – Detailed estimation of development, construction, and operational costs, with projected revenues supported by resource data and benchmarking against similar projects.
- **Financial Modeling** – In-depth financial analysis, including assumptions, energy yield forecasts, and scenario evaluation using both primary and secondary data.
- **Project Structuring** – Strategic frameworks for efficient and bankable project execution.
- **Tendering & EPC Evaluation** – Preparation of tender documents and comprehensive assessment of EPC contractors.

# Analysis of Solar Park Project

- **Solar PV System Design** (rooftop, ground-mounted, hybrid, on-grid, off-grid).
- **Solar Power Plant Planning** (utility-scale feasibility, layout, yield estimation).
- **Energy Yield Calculation** (kWh generation based on irradiation, tilt, azimuth, efficiency, and losses).
- **Component Selection** (PV modules, inverters, transformers, BOS).
- **Financial & Business Models** (CAPEX, OPEX, ROI, IRR, PPA, tariff structure).
- **Operation & Maintenance (O&M)** (best practices for efficiency, monitoring, and predictive maintenance).
- **Standards & Regulations** (IEC, NEC, BNBC, local utility interconnection).
- **Sustainability & Net-Zero Planning** (integration with storage, EV charging, microgrids).

## Essential Test of Solar Panel

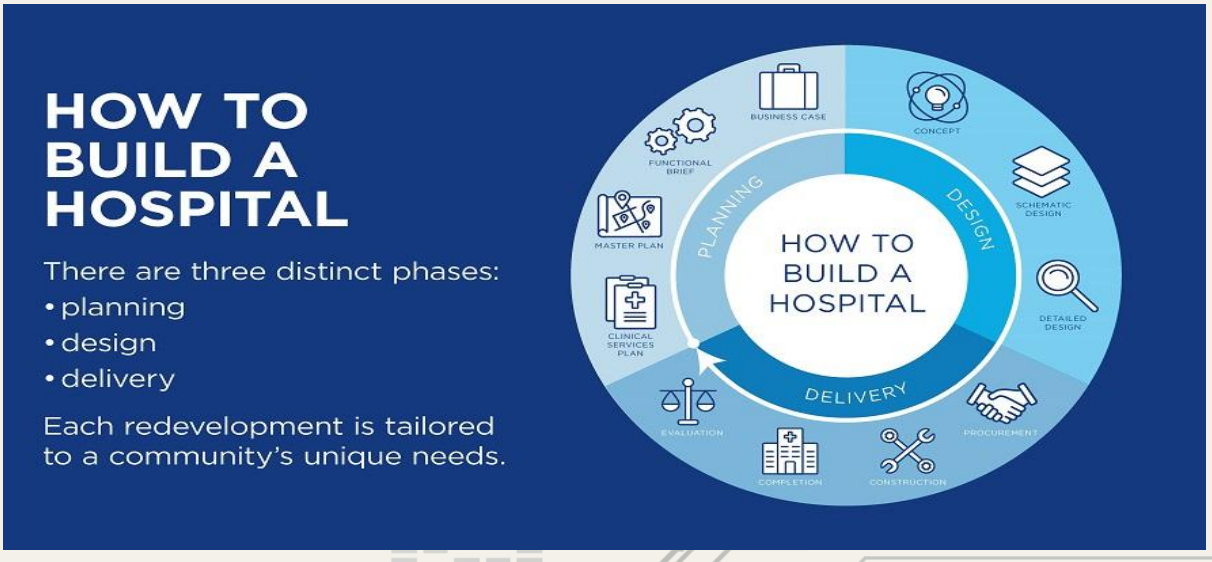


# Featured **Projects** of **Hospital &** Healthcare

| | | |
|---|---|---|
| **Project** | : | **Chattagram International Medical College Hospital** |
| **Owner** | : | CMICH (Private Fund) |
| **Assignment** | : | Detail Electrical & Mechanical, HVAC Design |
| **Location** | : | Chittagong |
| **Execution Period** | : | 3 Years |
| **Status** | : | Complete on 2024 |
| **Project Description** | : | Detail Engineering of HVAC and Electrical System Design |
| **Description of provided services** | : | • Preparation of Conceptual Design (General layout drawing)<br>• Details Civil Construction BOQ & Estimation Preparation<br>• HVAC & MEP Design Work<br>• MEP Installation Supervision Work as per BNBC.<br>• Electro-Mechanical Design and BOQ Preparation |

| | | |
|---|---|---|
| **Project** | : | **Gazi Enamul Kabir Hospital, Khulna** |
| **Owner** | : | GEKH (Private Fund) |
| **Assignment** | : | Detail Electrical & Mechanical, HVAC Design |
| **Location** | : | Khulna |
| **Execution Period** | : | 2 Years |
| **Status** | : | Ongoing |
| **Project Description** | : | Detail Engineering of HVAC and Electrical System Design |
| **Description of provided services** | : | • Preparation of Conceptual Design (General layout drawing)<br>• Details Civil Construction BOQ & Estimation Preparation<br>• HVAC & MEP Design Work<br>• MEP Installation Supervision Work as per BNBC.<br>• Electro-Mechanical Design and BOQ Preparation |

| | | |
|---|---|---|
| **Project** | : | **G+6 Stored 140 Bed General Hospital, Govt. of Kenya** |
| **Owner** | : | AAR Healthcare Group, Govt. of Kenya (Govt. & ADB Fund) |
| **Assignment** | : | Architectural, Structural, Mechanical & HVAC, Electrical System |
| **Location** | : | Kenya |
| **Execution Period** | : | 4 Years |
| **Status** | : | Complete on 2020 |
| **Project Description** | : | Feasibility Study and Detail Engineering of Architectural, Structural, Mechanical, Electrical System Design of G+6 Stored 240 Bed General Hospital |
| **Description of provided services** | : | • Preparation of Conceptual Design (General layout drawing)<br>• Details Civil Construction BOQ & Estimation Preparation<br>• HVAC & MEP Design Work<br>• Electro-Mechanical Design and BOQ with Estimation<br>• Detail Instrumentation Design Work |



# Some Featured **Projects** with **KfW & AIIB**

| | | |
|---|---|---|
| **Project** | : | **Digitalized Urban Health Care Infrastructure (modernization of DNCC Mohakhali 200 bed Hospital), Dhaka** |
| **Owner** | : | AIIB & Dhaka North City Corporation |
| **Assignment** | : | Feasibility Study (MEP & BOQ Costing) |
| **Location** | : | Dhaka |
| **Execution Period** | : | 6 month |
| **Status** | : | Complete on 2024 |
| **Project Description** | : | Feasibility Study of Digitalized Urban Health Care Infrastructure |
| **Description of provided services** | : | • Feasibility Study of Digitalized Urban Health Care Infrastructure<br>• Preparation of MEP & HVAC Design (General layout drawing)<br>• Preparation of indicative list of Major Equipment<br>• Preparation of BOQ & Cost Estimation<br>• Preparation of implementation plans and proposing the requisite resource and institutional framework;<br>• Carrying-out of thematic studies on aspects such as demography, environment, infrastructure and utilities, economy, land use, governance and SWOT analysis;<br>• Stakeholder consultations; |

| | | |
|---|---|---|
| **Project** | : | **Climate Change Adapted Urban Development Programme (CCAUD) Phase II, Khulna (extended)** |
| **Owner** | : | KfW, & Khulna City Corporation |
| **Assignment** | : | Feasibility Study with Ramboll |
| **Location** | : | Rupsha, Khulna |
| **Execution Period** | : | 9 month |
| **Status** | : | Complete on 2022 & Extended in 2023. |
| **Project Description** | : | Details Design of Alutola Pumping Station in Khulna City Corporation |
| **Description of provided services** | : | • Details Civil Construction BOQ & Estimation Preparation<br>• Side Road & Protection Dam Design<br>• Design and Estimation of 5.5km Connecting Road Pavement<br>• Assessment of availability of Power Line & land development<br>• Preparation of indicative list of Major Equipment and broad specification<br>• Preparation of cost estimate and preliminary financial analysis |

| | | |
|---|---|---|
| **Project** | : | **Climate Change Adapted Urban Development Programme (CCAUD) Phase II, Khulna** |
| **Owner** | : | KfW, & Khulna City Corporation |
| **Assignment** | : | Feasibility Study with Ramboll |
| **Location** | : | Rupsha, Khulna |
| **Execution Period** | : | 6 month |
| **Status** | : | Complete on 2020 |
| **Project Description** | : | Details assessment of 3 nos of Pumping Station in Khulna Region |
| **Description of provided services** | : | • Assessment and Suitability of site for proposed Pump Station<br>• Side Road & Protection Dam Design<br>• Preparation of Conceptual Design (General layout drawing)<br>• Assessment of availability of Power Line & land development<br>• Assessment of Pump Materials, Standards and Outlet Gate Materials<br>• Preparation of indicative list of Major Equipment and broad specification<br>• Preparation of cost estimate and preliminary financial analysis |

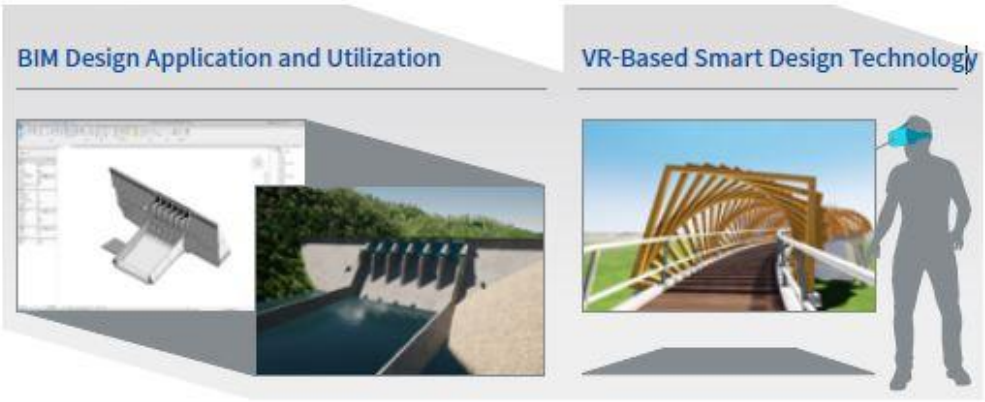
# Our **Support** to International **Projects**

As a multi-disciplinary consulting firm, **ARC TECH** provides its unique service in relent area of Engineering & Consultancy. A glimpse of services appended below:

- **Detailed Engineering Design,**
- **Mechanical, Electrical & Plumbing (MEP) Design**
- **HVAC & Firefighting Design**
- **Detailed Structural Design**
- **Costing & BOQ Preparation**

## BIM Design

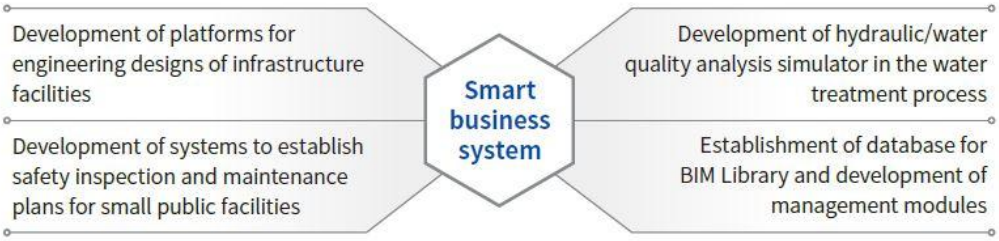
Applying and utilizing BIM from the design stage, we aim to improve design quality and develop smart city-related technologies that link a BIM-based facility maintenance system with VR and drones.




## World Class 300 R&D

We are building a design engineering platform and developing application programs to focus on securing the Fourth Industrial Revolution technology that will lead us to become a global engineering company.

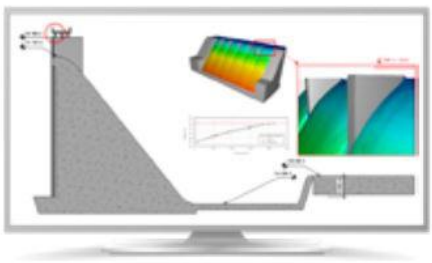
**Securing technology based on the Fourth Industrial Revolution in the engineering field**




## Asset Management System

## Process Management

## CFD Simulation



# **Professional** and Technical Resources

**ARC TECH** has over 36+ staff members (permanent & contractual) on the payroll structure of which including Engineers, Architects, Planners, Environmentalists, Economists, Financial Management Specialists, institutional specialists, and information technologists. Most of them are highly qualified, experienced, and skilled with a wide knowledge of relevant modern technologies. Besides, **ARC TECH** has a professional understanding and maintains contacts with a good number of specialized individual experts who work as associates in specific projects according to the schedule of the respective projects under **ARC TECH**'s overall management.

**ARC TECH** has a fully functional office located at **Dhaka Office:** House # 25/2, Road # 28 (old), Dhanmondi, Dhaka-1209, and **Khulna Office:** NLI Tower (2nd Floor), 977 Upper Jashore Road, Khulna-9100, Bangladesh, and is well equipped with all modern computer and communication systems. **ARC TECH** is capable and provides logistical support to all of their projects offices if necessary.


# Contact Us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