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ABOUT US

Surge Engineering is a leading engineering company based in Bangladesh, dedicated to providing top-notch electro-mechanical services to a diverse range of clients in the industrial, commercial, and residential sectors. With a strong commitment to sustainability and energy efficiency, we offer comprehensive solutions that cater to the unique needs of our clients.

Since its inception, Surge Engineering has completed more than 200+ projects with a variety of clients including local and international ones. We focus on meeting the needs of our esteemed clients through sustainable, affordable and efficient processes. We listen to our clients and value their priorities.

Surge Engineering is affiliated at numerous local and global organizations: Institution of Engineers, Bangladesh (IEB); Association of Energy Association (AEE), Enlisted as a designer at RAJUK etc. Surge Engineering was awarded a fellowship by US Department of State as an emerging entrepreneur in 2016. We also received a grant from Startup Bangladesh Ltd. in 2017 for our innovative project: Portable Biogas Plant. Surge Engineering was awarded the best impactful startup from Bangladesh at Slush (Finland) 2017 and represented Bangladesh at that prestigious event.

Our Vision:

Our vision is to be a driving force in ensuring energy-efficient solutions for a better and more sustainable future. We aim to become a trusted partner for our clients, helping them reduce their energy consumption while maintaining optimal performance and comfort.

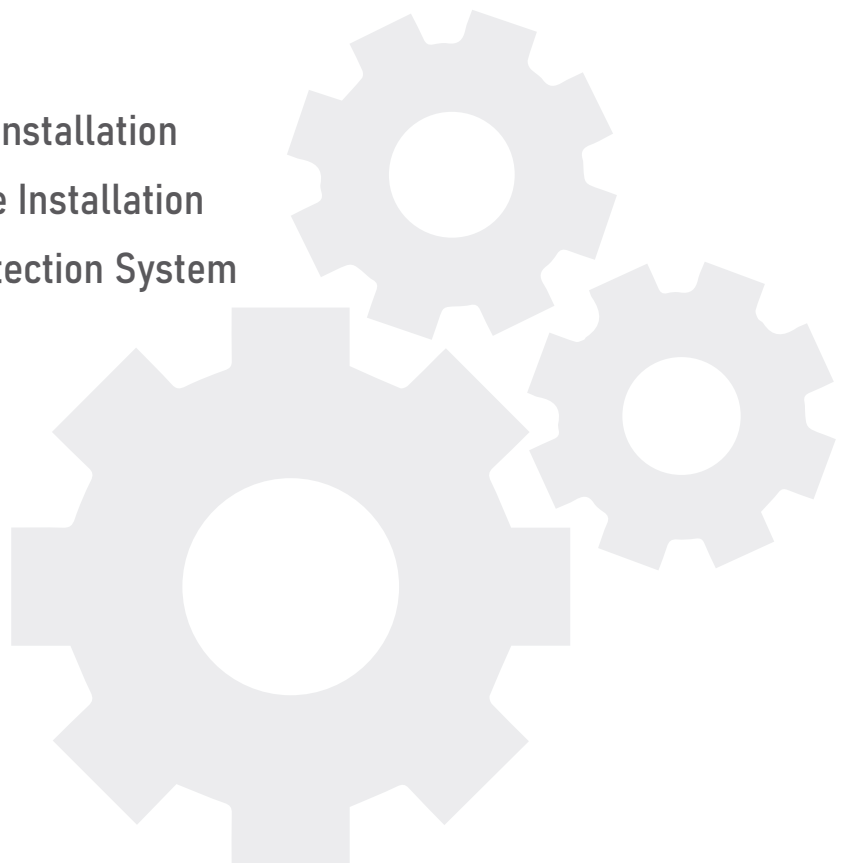


**STARTUP
BANGLADESH**

OUR SERVICES

We offer a wide range of services designed to meet the varied requirements of our clients:

- i Design
- ii Audit
 - a Electrical Safety Audit
 - b Energy Audit
- iii Installation
 - a Electrical System Installation
 - b Underground Cable Installation
 - c Fire Alarm and Detection System
- iv Material Sourcing
- v Commissioning



DESIGN

Our experienced team of engineers and designers creates innovative and customized electro-mechanical designs that maximize efficiency and performance. It includes:

- i) Electrical System Design (415V to 33kV Voltage level)
- ii) HVAC (Heating Ventilation & Air Conditioning)
- iii) Fire Detection & Protection
- iv) Renewable Energy (Solar System, Biogas Plant)

AUDIT

Our services include Electrical Safety and Energy Audit. We conduct thorough energy audits to identify areas of improvement, potential energy-saving opportunities, and system optimization strategies. Through Safety Audit, we follow a systematic approach to evaluate potential hazards and to recommend suggestions for improvements. It is an important tool for identifying deterioration of standards, areas of risks or vulnerability, hazards and potential accidents in plants for determining actions to minimize hazards.

ELECTRICAL SAFETY AUDIT

An Electrical Safety Audit (ESA) is a systematic approach to evaluate potential hazard and to recommend suggestions for improvements. It is an important tool for identifying deterioration of standards, areas of risks or vulnerability and potential accidents in the system for determining actions to minimize hazards. It ensures that safety effort is effective & meaningful.

Surge Engineering has audited numerous electrical systems including factories, commercial buildings, data centers, process industries etc. Our scope does not limit to identification only but also to rectify those.

Scope of Work in ESA:

- Identification of Electrical Hazards (shock, fire, explosion etc)
- Review of protection devices
- Review of major cables on sampling basis capacity and sizing
- Survey of Lightning Protection System
- Survey of Earthing System
- Review of Electrical Preventive Maintenance Program
- Examination of hand tools and Personal Protective Equipment (PPE)
- Identification of Hot Spot at Electrical Panels by the state-of-the-art Thermal Imager
- Review of system handling electrical accidents in the factory
- Review of awareness amongst factory employees towards Electrical Safety
- To check the compliance against legal and amp; statutory requirement (Electrical Safety Aspects as per the applicable standard: Bangladesh National Building Code (BNBC), 2020
- Analysis of observation vis-à-vis regulatory requirements and best practices
- Identification of gaps and rectification

Equipment used in ESA:

- Thermal Imager (FLIR, Model: E5-XT)
- Multi Meter
- Earth Resistance Meter
- Insulation Resistance Meter



TYPES OF AUDIT

PRE AUDIT

Electrical system
information collection
Visual Inspection and
identifying risky zones

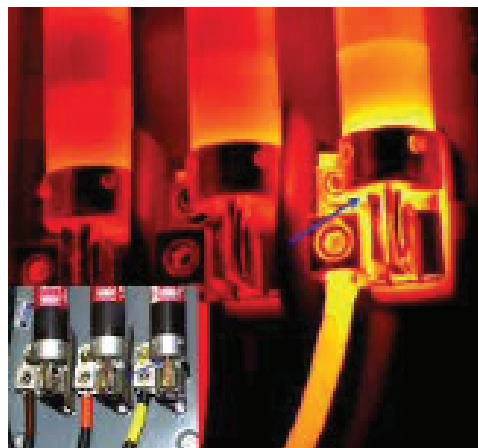
AUDIT

Measurements and
calculation. Report
preparation and
recommendation.
Training to the
concerned.

POST AUDIT

Check modification
according audit recom-
mendation and
Verification of the audit

THERMAL IMAGING TECHNOLOGY



Thermal imaging is the thermo graphic temperature measurement using Infra-Red Camera. It is the state-of-the-art technology to locate hotspot in Distribution Boards or Cables. The thermal imager instantly diagnoses the accident prone region.

ENERGY AUDIT:

Energy Audit is an attempt to balance the total energy inputs with its use and serves to identify all the energy sources in the system and quantify energy usages according to its distinct function. Energy Audit helps in energy cost optimization, pollution control and safety aspects and suggest the method to improve the operation and maintenance practice of the system.

Nowadays Energy Audit has become a key factor in deciding the product cost at micro level. Energy audit takes more attention for the following reasons:

- For identifying the quality and cost of various energy inputs.
- For assessing present pattern of energy consumption in different cost centers of operations.
- For relating energy inputs and production output.
- For identifying potential areas of thermal and electrical energy economy.
- Highlighting wastages in major areas.
- For fixing energy saving potential targets for individual cost centers.
- For implementation of measures for energy conservation and amp; realization of savings.

INSTALLATION

Installation: Our skilled technicians ensure the seamless installation of electro-mechanical systems, following industry best practices and adhering to safety standards.

ELECTRICAL SYSTEM INSTALLATION:

Surge Engineering has been involved in electrical design, supply and installation work since its inception. We envision reducing electrical energy consumption through proper design. Surge Engineering is enlisted at RAJUK (Rajdhani Unnayan Kartripakkha) as a designer since 2013.

We do layout design - circuit diagram- earthing & lightning protection, prepare Bill of Quantities (BOQ), supply materials, install the items, supervise and ensure quality of any electrical system. We are keen to use cutting edge tools, software and equipment during these processes.

We are affiliated with the renowned manufacturers and suppliers of electrical items and so we ensure the best product at an affordable price. Products at our current portfolio are:

- i) Electrical Distribution Boards
- ii) Cable
- iii) Conduit (PVC, flexible PVC, HDPE etc.)
- iv) Switch (Push Button & App controlled)
- v) Socket (Push Button & App controlled)
- vi) Light & Lighting Fixtures (LED, CFL & Fluorescent)
- vii) Circuit Breaker (LT & HT breakers)
- viii) LT Panels
- ix) Automatic Transfer Switch (ATS)
- x) Surge Protection Device (SPD)
- xi) Accessories: Cable Tie, PVC Tee-Socket-Joint-Circular Box, Clamp, Cable Gland, Wall (Royal) Plug, PIB Tape, Heat Shrinkable Tube, Cable lugs, MK box etc.
- xii) Cable Tray
- xiii) Transformer: 50kVA ~ 2500kVA
- xiv) Switchgear

UNDERGROUND CABLE INSTALLATION



Construction stages

01 Trenching and conduit installation

- Trenching can occur on more than one site on a project simultaneously.
- Plastic conduits (pipes) will then be placed in the trenches and then the area is backfilled with a special kind of concrete.
- Then the section of road is either permanently reinstated immediately or at the end of the project, depending on contractual agreements.

1-3 days

Time it takes to complete work outside most properties.

02 Underground joint bays

- Underground joint bays will be constructed every 600-900m along the route.

The joint bays are used to connect the cable sections.

- Between construction of the joint bay and connection of the cables, joint bays are either backfilled temporarily, barricaded or enclosed. Once cables are connected, the section of road is resurfaced.

2-4 months

Overall time it takes to work at each joint bay location

03 Cable installation

- At a later date, cable drums will be set up at joint bay locations.
- The 132,000 volt cables are pulled through the pipes and connected at the joint bays.
- Cable connection takes one to two weeks.

2-4 weeks

Time it takes to complete work outside most properties.

FIRE ALARM AND DETECTION SYSTEM

The Fire Alarm and Detection System is the efficient system to ensure the maximum protection and safety of any possible fire hazards. This highly effective unit is all up to the mark with special intelligent control panels and specialized fire alarm and detection system to react to the earliest sign of any impending fire occurrence. In our system, we work to deploy control panel, smoke detector, heat detector, manual call point, pull station, sounder/hooter, monitor module, isolator etc.

Certifications: All devices of detection system are UL listed



Fire Protection (Standpipe / Hydrant) :

Standpipe system is a series of pipes. This is an extension of the fire hydrant system. This system connects a hose to the hydrant and eventually opens a valve in it to provide a strong flow of water. It links this hose to a fire engine which can pump to boost a powerful water pressure and thus splits into multiple streams. Major items consisting of this system are fire pump sets, hosepipe, hose reel, landing valves, y- strainer etc.

Certifications: All items of hydrant system are FM/LPCB/UL listed.



Fire Protection (Sprinkler) :

A fire sprinkler is an active fire protection method consisting of a water supply system, providing adequate pressure to a water piping system onto which fire sprinklers are connected. This system maximizes water pressure over the point of fire origin and minimizes the water damaging the building. In the system, major items are sprinkler, fire pump sets, zone control valve, different types of valves.

Certifications: All items of sprinkler system are FM/LCPB/ UL listed



Fire Door :

Fire Door is a door with a fire resistance rating used as a part of passive fire protection system to reduce the spread of fire and smoke between compartments and enables a safe exit from a building or structure. A fire door contains door frame, vision panel (glass), door coordinator, panic bar, hinges, external trim, smoke seal, door closer, electromagnetic door holder etc

Types: Metal door

Ratings: 90 min., 120 min., 180 min.

Certifications: All accessories of fire door are UL listed.



Glass Door and Partitions :

The need for a quality ensured and reliable fire protection system in commercial buildings, office complexes in Bangladesh have a gained significant importance in recent years.

Fire and fire related hazards can cause heavy loss to life, properties and critical data. Simple measures such as implications of glass door and partition are worth the assurance of safety to life and property. Moreover, it emphasizes an impressive look to the entire environment of the office or building interior.

We are here for you in to provide quality, safety and quick solution in this area.

As most fire doors are designed to be kept closed most of the time, some doors are designed to be open under normal circumstances and be automatically closed in occurrence of fire. In any situation, we make sure of the easy movement of doors, avoiding any impairment.

Certifications: UL listed rating 30, 60, 90, and 120 min.

MATERIAL SOURCING

We have established strong relationships with trusted suppliers, allowing us to source high-quality materials at competitive prices, ensuring the reliability and durability of our solutions.

COMMISSIONING

We ensure that all systems are commissioned properly to operate at peak efficiency, providing our clients with systems that deliver on their performance promises.

Why Choose Surge Engineering:

Energy Efficiency: Our focus on energy-efficient solutions helps our clients reduce operational costs and minimize their environmental impact.

Experience: With years of experience in the field, our team has a deep understanding of the industry, enabling us to deliver top-quality services.

Customization: We tailor our solutions to meet the unique needs of each client, ensuring that our services align with their specific goals and objectives.

Reliability: Our commitment to using high-quality materials and industry-standard practices ensures the longevity and reliability of our solutions.

Surge Engineering is dedicated to being a driving force in the pursuit of a sustainable and energy-efficient future. Join us in making a positive impact through innovative engineering solutions.