VIBHAWA CONSULTANTS

QATAR CAPABILITY BRIEF

# ETAP studies and KAHRAMAA-ready electrical design support for Qatar projects

Vibhawa Consultants runs load flow, short circuit, protection coordination and arc flash studies, and works as a design desk for KAHRAMAA and Ashghal projects. Qatari consultants, contractors and panel builders keep the client, the submission and the signature; we produce the engineering behind it.

**3 Qatar projects**
delivered by Vibhawa since 2020

**ETAP v24**
licensed since 2020

**ISO 9001:2015**
SGS, UKAS accredited

**Since 2018**
255 projects, 147 client groups

## 01 Power system studies

### Load flow and short circuit
Voltage drop, loading and fault levels to IEC 60909, with switchgear duty checks.

### Protection coordination
Grading from the KAHRAMAA intake to final distribution, with time-current curves and a settings schedule.

### Arc flash assessment
Incident energy and boundaries to IEEE 1584-2018, PPE categories and labels to NFPA 70E.

### Cable sizing and thermal analysis
IEC 60287 ratings, including underground corridors and district cooling feeders.

### Motor, chiller and generator studies
Starting studies for large motors and 11 kV chillers; island-mode studies.

## 02 Electrical design support

### MV and LV distribution design
SLDs, load schedules, maximum demand and diversity to the KAHRAMAA LV Electricity Wiring Code.

### Substations and intakes
11 kV substation and RMU arrangements, transformer sizing, protection philosophy.

### Infrastructure packages
Electrical design support for Ashghal road and utility packages: supplies, lighting feeders, cable corridors.

### Fire and life safety supplies
Fire pump and emergency supply checks to NFPA 70 and Qatar Civil Defence requirements.

### Design verification and comments
Independent design review, and revised calculations to close consultant and authority comments.

## 03 How we work with Qatari partners

1. **Send your SLD**
An SLD and the scope are enough for a quote.

2. **Fixed quote in 48 h**
Scope, price and programme.

3. **Data and model**
Data checklist, ETAP model or design, gaps raised early.

4. **Review and submit**
Deliverables in your title block; your engineer signs and submits.

**Colombo is 2.5 hours ahead of Doha**, so our working day covers all of yours.

**Send your single line diagram**
Scope, price and programme within 48 hours

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## 04 Qatar work Vibhawa has delivered

### Qatar Airways hangar conversion

**2020–2021 · awarded directly by Bin Ghalib Engineering, panel builder**

ETAP load flow and short circuit study, and protection coordination study for the modified electrical system of a hangar converted to an engine workshop and storage.

### Military facility, Qatar

**2021–2022 · government**

Protection coordination study for the facility's electrical distribution.

### Multi Energy, Qatar

**2022 · power and energy**

ETAP power system model.

Comparable studies elsewhere include protection coordination for 52 MV relays at INSEE's 25 MVA Puttalam cement plant, arc flash and protection studies for five INSEE plants in Vietnam, and ETAP modelling of more than 100 substations for Snowy 2.0 in Australia.

### Led by an engineer who designed in Qatar

**Nadeera Wijesinghe**, B.Sc. (Eng) Hons, M.Sc. Energy Systems, Chartered Electrical Engineer (IESL), PMP, Level 3 Certified Infrared Thermographer. Before founding Vibhawa he worked in Doha as a design engineer and was registered as a Grade A Electrical Engineer with Qatar's Engineering Committee.

**Lusail Stadium:** MV design verification against FIFA reliability requirements, with failure and worst-case scenario analysis in ETAP.
**Doha Festival City:** 11 kV design for a 78 MVA load with 31.5 kA substations, an 11 kV chiller start-up study and an island-mode protection study.
**Lusail City:** ETAP thermal analysis of an underground 11 kV cable corridor for a district cooling plant.
**Qatar Expressway Programme:** EHV to LV design from concept to detailed design, with cable raceway thermal analysis.

These four projects are Nadeera's personal experience with his previous employer, before he founded Vibhawa. They are not Vibhawa projects.

## 05 Codes we work to

| Code | Used for |
|---|---|
| KAHRAMAA LV Electricity Wiring Code | Installation design, maximum demand, inspection and testing |
| QCS (Qatar Construction Specifications) | Electrical specification and testing requirements |
| IEC 60909 · IEC 60287 | Short circuit · cable ratings |
| IEEE 1584-2018 · NFPA 70E | Arc flash · labels and PPE |
| NFPA 70 · Civil Defence | Fire pump and life safety supplies |

## 06 What you receive

- ETAP model handed over with the report
- Fault levels and switchgear duty checks
- TCC curves and a settings schedule
- Arc flash results and printable labels
- Drawings and calculations in your title block

**White-label by default.** Vibhawa is not a Qatar-registered engineering consultancy office and does not submit to KAHRAMAA or Ashghal in its own name. Not offered: DC arc flash studies or PSCAD/EMT modelling. Site testing and thermography in Qatar are arranged job by job.

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