



Electrical Wiring Tender for a Small Residential Building

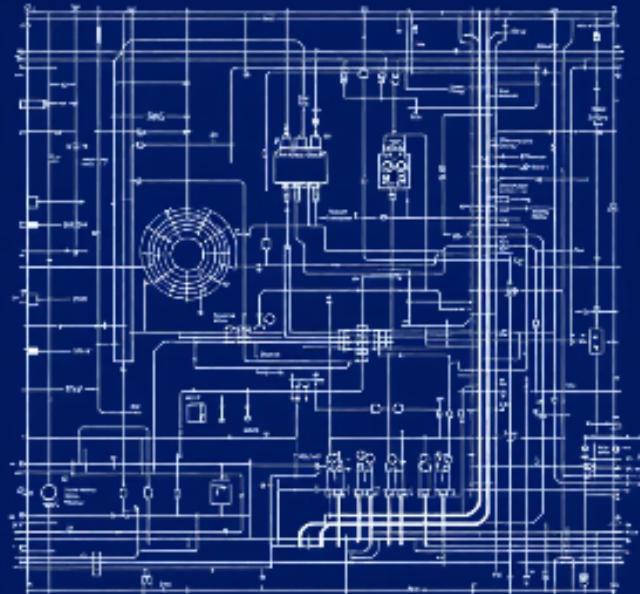
Mini Project Presentation
Diploma / BTech Electrical Engineering

The Challenge

Current Industry Problems

Residential electrical work frequently begins without proper planning or documentation

- Cost overruns and material wastage
- Quality compromises
- Safety hazards and code violations
- Owner-contractor disputes



Project Scope



Building Size

Single-floor residential house

Approximately 800 sq. ft.



Room Layout

5 Rooms Total

Hall, 2 Bedrooms, Kitchen, Bathroom



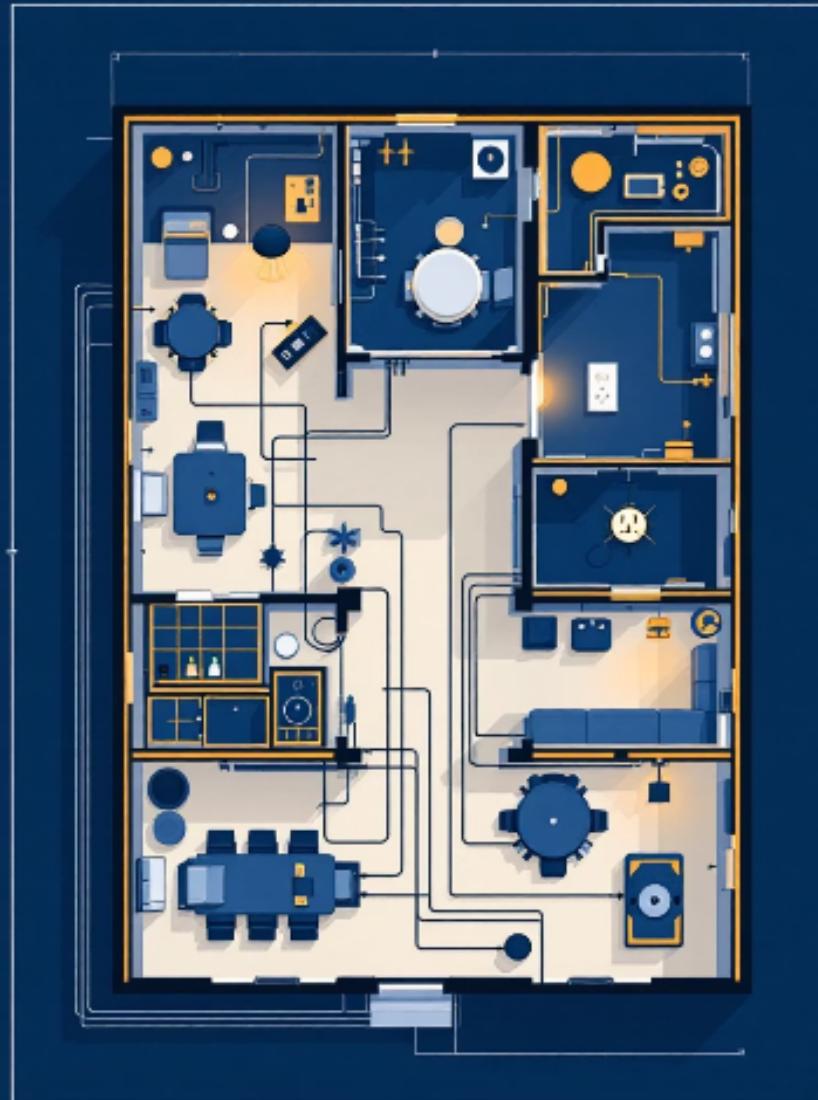
Electrical Points

6 Light points · 4 Fan points · 9 Socket outlets (15A) · 4 Heavy load points (15A)



Safety Systems

Distribution Board with MCBs & RCCB · Complete earthing system for protection



Market Research & Industry Insights

₹121 Cr

Market Size

Indian residential construction market value annually

8-12%

Electrical Cost

Portion of total building construction cost

70%

Fire Incidents

Residential fires caused by faulty wiring (NCRBI)

Critical Findings

- ISI-marked materials reduce failure rates by 60%
- Concealed conduit wiring preferred in 95% of modern homes
- Professional tender documents reduce disputes by 80%



Technology & Standards



Wiring System

Concealed Conduit Wiring

PVC pipes embedded in walls for protection and aesthetics

Wire Specifications

Purpose	Size	Standard
Lighting Circuits	1.5 sq mm	IS:694
Socket Outlets	2.5 sq mm	IS:694
Heavy Load (AC, Geyser)	4 sq mm	IS:694

MCB Protection

IS:8828 Standard

RCCB Safety

30mA (IS:12640)

Load Calculation Analysis

Connected Load Breakdown

Item	Quantity	Total Wattage
LED Lights	6	60W
Ceiling Fans	4	300W
5A Sockets	9	900W
AC Points	2	3000W
Geyser	1	2000W
Total		7.01 kW



Demand Load

4.2 kW (60% diversity factor)

MCB Rating

Bill of Quantities



Project Benefits



For Owners

- Transparent cost estimation before work begins
- Quality assurance through ISI specifications
- Legal document for contractor accountability



For Contractors

- Clear scope prevents scope creep
- Professional quotation preparation
- Reduced material wastage



For Industry

- Standardized practices
- Improved safety compliance
- Better project management

Key Learnings



Technical Skills Gained

01

Load Calculation

Electrical load calculation methodology for residential buildings

02

BOQ Preparation

Bill of Quantities with current market rates

03

Standards Knowledge

IS standards for electrical materials and safety devices

04

Documentation

Professional tender document structure

Conclusion & Future Scope

Project Outcomes



Future Scope



Thank You!

Questions?

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