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**DEVELOPMENT OF AN ASSESSMENT CRITERIA FOR
MAXIMUM ELECTRICAL DEMAND FOR BUILDINGS
IN SRI LANKA**

"Development of an assessment criteria for maximum electrical
demand in Sri Lanka" MSc report

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ABSTRACT

This thesis describes an investigation into the maximum electrical demands of commercial and Residential buildings to compare and optimize the design stage electrical demand estimations. Consequently, optimize the main system and equipment capacities and thereby reduce the financial and space inefficiencies related to commercial and residential buildings.

This will bring direct benefits to the clients as well as to the country as a whole, to reduce the total project expenditure without sacrificing the performance and / or functionality of the building. Identifying the main reasons behind the oversizing of electrical equipment will be investigated in detail so that while in the design phase these factors can be accommodated to accurately forecast the real-life building power requirements.

Number of International documents have been developed with these considerations. However, it has been noted in the industry that in local context (i.e. local projects), there are deviations between the forecasted and actual results. Hence, as part of this review, a comprehensive review of these international documentation has been done.

The results of this review would serve as a useful reference, as an assessment criteria for MEP consultants to provide a much more optimized overall electrical design.

Keywords: Assessment Criteria, Electrical Maximum Demand, Commercial Buildings, Peak Demand, Residential Buildings

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LIST OF NOMENCLATURE

| Abbreviation | Description |
|---------------------|---|
| AC | Air Conditioning |
| ASHRAE | American Society of Heating, Refrigerating & Air-Conditioning Engineers |
| AS/NZS | Australia and New Zealand Standards |
| BMS | Building Management System |
| BS | British Standard |
| BSRIA | Building Services Research and Information Association |
| CEB | Ceylon Electricity Board |
| CIBSE | Chartered Institution of Building Services Engineers |
| EMS | Energy Management System |
| HVAC | Heating, Ventilating and Air Conditioning |
| IEC | International Electro-technical Commission |
| LV | Low Voltage |
| MEP | Mechanical Electrical Plumbing |
| MRB | Multi-apartment Residential Buildings |
| MV | Medium Voltage |
| NEPRA | National Electric Power Regulatory Authority |
| PUCSL | Public Utilities Commission of Sri Lanka |
| SLS | Sri Lanka Standards |