

# **ENERGY EFFICIENT LIGHTING DESIGN FOR NATIONAL ARCHIVES BUILDING**

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08/8305



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Degree of Master of Science

Department of Electrical Engineering

University of Moratuwa  
Sri Lanka

September 2012

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Dissertation submitted in partial fulfillment of the requirements for the  
Degree Master of Science

Supervised by: Dr.Nalin Wickramarachchi

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September 2012

# DECLARATION

“I declare that this is my own work and this dissertation does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

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Signature of the supervisor  
(Dr. Nalin Wickramarachchi)

Date:

## ABSTRACT

National archives department is the one and only department dedicated for conserve old books, important/ valuable/historical documents and Audio video collections in Sri Lanka. It is a national requirement to protect those and keep it for future generations. In order to cater that requirement the government had decided to build a new building. Central engineering Consultancy bureau (CECB) is given new building design and construction. The key objective for this research is to provide energy efficient lighting system for the new building with minimal adverse effect on the service life of the archival materials.

Energy efficient is vital at a national and international level. Proposed designed luminaries with the T5 fluorescent tube provide the opportunity reduced electricity consumption and better illumination. Use of natural daylight helps to further minimize electricity usage. By introducing different Illumination levels to different areas provide user friendly lighting environment. Use of diffuser type florescent light fitting minimize the Ultra Violet rays emission and LED light fittings provide low heat gain to the inside building.

Key words: energy efficient, lighting, lighting design, T5 fluorescent, repositories, archives



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