Working title of the student case (year)

Study of the impact of lighting intervention in historic and touristic city of Nepal

Case owner

Dr Diwakar Bista/ Team Members/ Academic Institute/ government agency

Problem/Context (As redefined and/or drafted by the student teams)

Heritage sites and natural sites of Nepal entice people from all over the world. These sites support the cultural and traditional beliefs of local people. Transformation in lifestyle, cultural practices, technology, and tourism demands the management and intervention of artificial lighting at heritage sites and monuments. The intervention of modern electric lighting in these structures (natural and historic) should be carried out without conceding cultural values, visual perception, and traditional outlook. On the contrary, in most of the sites, there are no lighting or unscientific lighting interventions that are inappropriate, unsurpassed, exaggerated, and unpleasant. These practices have impeded the magnificence of these sites, tourism and the lifestyle of people residing in the vicinity. The goal of the study is to review the status of lighting practices in heritage sites, temples and natural landmarks to identify problem areas and their possible approach and solution for the intervention of modern lighting.

Team: M/F: 2/2

Rajan Shah

Usha Adhikari

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Sunita Koju

Bachelors students of Electrical and Electronics Engineering (Power and Control), fourth year and Masters students of EEBD (Energy Efficient Building Design), Kathmandu University

Mentor

Aayush Bista, Department of Electrical and Electronics Engineering, Kathmandu University

Proposal(s)/ Deliverables (with links)

Final Report

Presentation

Time frame:

(**Course**: Nov 2021 to April 2022

(Field visit: March 26, 2022 – April 2, 2022)

Title of the course:

Illumination Engineering EPEG 423

Advanced Illumination Engineering EGPG 604

Description of the course:

Illumination Engineering EPEG 423

This course introduces students with lighting fundamentals, measurement and technology and introduces solid state lighting technology and imparts the skills necessary for implementing light emitting diode in various sectors of illumination.

Advanced Illumination Engineering EGPG 604

This course intends to develop an advanced understanding of light and lighting in terms of standards, energy efficiency, economy, human factors, measurements, calculations, computer-aided simulations, hands-on design skills and creative design methods

Learning Outcomes:

- *Explore the real time challenges*
- *Interact and communicate with inter-disciplinary or non-technical domain*
- *Use various representations to portray problems and ideas*
- *Develop skills required to tackle challenges*
- *Take the feedback and general perspective of Nepalese people towards artificial illumination*

TEACHING METHODS

***Group**: disciplinary based, team work in a real case scenario*

***Aspects**: each and every possible aspect related to the case (not specific to discipline)*

***Activity**: Real time case identification, field works, discussion & interactions, brainstorming*

***Reflection:** Brainstorming for the solution of the real time problem*

***Approach**: Learner centric, design thinking method, problem centered, sustainability consideration*

***Mentoring**: Guidance, facilitation, maintaining team integrity, bridging (link with stakeholders)*

***Dissemination**: Project works, Reporting, presentations and other events*

FINAL OUTCOME

***Real-world relevance for learning:** Students can solve problems that are important to them and their communities.*

***Exposure to real-world:** Students interact with adults, businesses and organizations, and their community, has helped them to develop interest towards the problems in their community.*

***Creativity and Technology:** Students got different creative skills for the problems they found in their community by using a spectrum of technology tools.*

***Deeper Learning:** Students has got deep knowledge and are able to apply what they know to new situations.*

Local Contact/ Course coordinator's contact:

- **Dr Diwakar Bista**
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  Assoc. Director, Technical Training Center
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