Assignment 02: Visual environment and lighting (2024-2025)

Vision provides us with more information than all of our other senses combined. As a consequence, the environmental conditions necessary to optimise the eye's performance are of paramount importance. There are many different aspects of the visual environment and lighting systems to consider when trying to produce the conditions necessary for good visual performance and visual comfort.

Objective

To assess the visual environment of a building space and develop a better understanding of the basic principles of lighting design.

Methodology

Each student shall choose a building space that you find interesting (e.g. classroom, library, museum, office, restaurant, retails, shopping mall) and carry out the investigation of its visual environment and lighting design. Students are recommended to apply the knowledge and information obtained from the lectures to critically assess the situation in real life. By using personal observations and technical analysis, you shall evaluate the characteristics of the visual environment and the key factors affecting the lighting design. The space being investigated may have both natural and artificial light sources, or only one of them.

Report Submission

Each student shall prepare a brief technical report of not more than ten (10) A4 pages to explain the findings of the investigation in a systematic and logical manner. The contents of the report shall address the following aspects. Other important issues may also be included.

(a) Description of the building space and its functions/activities
(b) Characteristics of the visual environment and lighting design
(c) Key factors affecting the lighting quality and design parameters
(d) Recommendation(s) for enhancement or improvement (if any)

Detailed calculations and technical information are not required, but essential data, diagrams, floor plans and photos of the space and the lighting system are useful to effectively present

the findings and enhance the understanding. If appropriate, a list of references and proper citations should be provided to avoid plagiarism.

The report shall be submitted in electronic PDF format. The assessment criteria of the report include quality of the content, organization, clarity of thought, and report writing skills. The report will be evaluated on synthesis of information during the course and from your own reading/study, and evidence that you have thought about the subject and the lecture topics in some depth. A clear structure and a logical argument is important and you should provide evidence of critical thinking, originality and effective writing.

Report submission (via Moodle): **<u>on or before 12 Nov 2024 (Tue)</u>**

Useful References

Guyer J. P., 2010. *Introduction to Interior Lighting Design*, Continuing Education and Development, Inc., Woodcliff Lake, NJ.
https://www.cedengineering.com/userfiles/An%20Introduction%20to%20Interior%20Lighting%20Design%20R1.pdf

IESNA, 2011. *The Lighting Handbook: Reference & Application*, 10th ed., Illuminating Engineering Society of North America, New York, N.Y.

Karlen M., Spangler C. & Benya J. R., 2017. *Lighting Design Basics*, 3rd Edition, Wiley, Hoboken, NJ.

NIBS, 2015. *Design Guideline for the Visual Environment*, Version 6, National Institute of Building Sciences (NIBS), Washington, DC.
https://www.nibs.org/files/pdfs/NIBS_LVDP_Guidelines_2015.pdf

SLL, 2022. *The SLL Code for Lighting*, Society of Light and Lighting (SLL), London.

SLL, 2018. *The SLL Lighting Handbook*, Society of Light and Lighting (SLL), London.

van Bommel W., 2019. *Interior Lighting: Fundamentals, Technology and Application*, Springer International Publishing, Cham.

Lighting Design Handbooks:
- Handbook of Lighting Design (ERCO Edition)
  https://download.erco.com/en/media/handbook
- The Lighting Handbook (Zumtobel)
  http://www.zumtobel.com/PDB/teaser/EN/lichthandbuch.pdf