UNIVERSITY COLLEGE LONDON

University of London

EXAMINATION FOR INTERNAL STUDENTS

For the following qualifications :-

M.Sc.

ESGL4: Advanced Integrated Lighting Design

COURSE CODE	:	**ENVSGL04**
DATE	:	**13-MAY-02**
TIME	:	**10.00**
TIME ALLOWED	:	**3 hours**

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TURN OVER

UNIVERSITY OF LONDON

MSc DEGREE IN BUILT ENVIRONMENT 2002
for Internal Students of University College London

ESGL4: Advanced integrated lighting design

Answer **FOUR** questions.

All questions carry equal marks. Use annotated sketches.

1. Prepare a sketch design proposal for a wall-mounted luminaire with a direct/indirect lighting distribution (ULOR 70%, DLOR 3%). It is to house two 55W TC-L compact fluorescent lamps (each 535mm in length) and the luminaire should integrate into contemporary office interiors. The elements of the luminaire should be described in detail and an indication given of the asymmetric light distribution.

2. An international cinema chain uses the entrance foyer as the focal point for the introduction of the movie experience to the cinema-going public. Outline the issues involved in creating stimulating visual environments that use a variety of multimedia inputs while maintaining orientation and legibility.

3. List and annotate the key steps involved in designing a decorative exterior lighting solution for the monument shown in Figure 1.

4. A hospital ward is an environment where a multitude of visual tasks are undertaken and patient comfort is given a high priority. What are the requirements for the lighting installation in terms of visual comfort, colour quality and the design of equipment in such an environment?

5. The Industrial Revolution in England threw up a large number of warehouse buildings characterized by large expanses of floors and ceilings, with cast iron columns at 3 - 4m centres and small windows. Now that many are redundant for their original purpose new uses are being sought for these historically significant buildings.

   Imagine that such a building is to be converted as the regional centre of a national gallery with a variety of paintings and sculptures in its collection. Prepare an annotated checklist to cover daylighting, electric lighting and conservation issues to assist you in your initial appraisal of the potential of the buildings.

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6. Luminaire and lamp developments over the past 20 years have improved efficiency particularly with respect to optical control and colour quality. How are these developments compatible with the improvement of visual comfort in the design of the exterior lit environment and the reduction of light pollution.

7. Refurbishment of older buildings accounts for 50% of construction activity in the UK. Outline the benefits of the introduction of lightwells or atria into such buildings to accommodate modern commercial activity and note the possible problems with such interventions.

8. The major building of the South Bank in London is the Royal Festival Hall. It is surrounded by adjoining halls and a gallery. A complex of walkways consists of a promenade raised on columns to provide pedestrian access to the three halls and gallery. The architectural expression of the buildings is of separate geometric elements in a monolithic reinforced concrete construction. A plan of the complex is shown in Figure 2 and a photograph in Figure 3.

   Describe the approach you might take in developing a strategic lighting plan for the complex and the type of analysis of the existing lit environment that would need to be undertaken.

END OF PAPER
FIGURES ATTACHED