

Initial Observations on Lighting Situations in The British Museum

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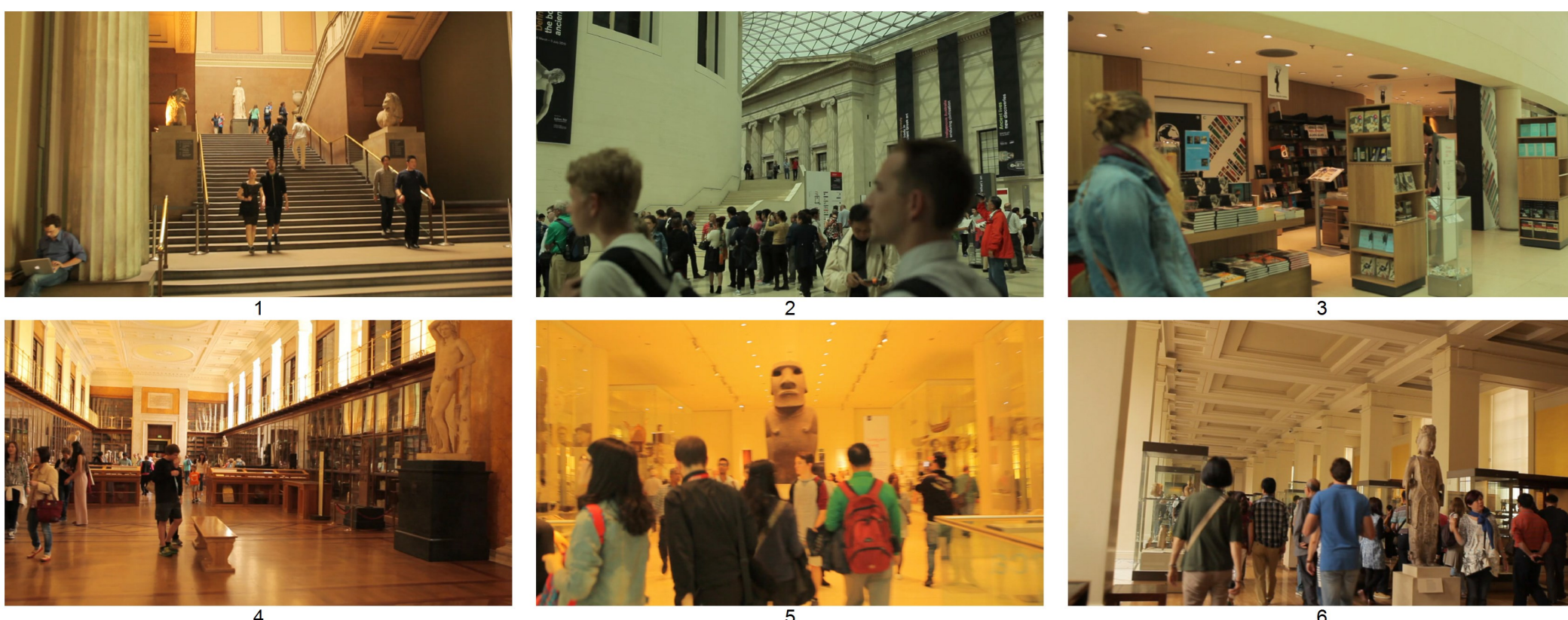
The British Museum is home to some of the most important and impressive historical artefacts on earth. Caring for them and displaying them so that they may be shared with the public involves difficult compromises, balancing long term object preservation and optimal display for the visitors. This presentation considers the resultant lighting situations, with a focus on the colour appearance of objects and the impact of subtle differences in the colour of white light between adjacent spaces.

Chromatic Adaptation

Human observers adapt to variations in natural light quickly and without conscious strain in order to maintain the consistent colour appearance of objects viewed under different illuminations. Thus when moving from shade to direct sunlight or witnessing daylight fade to dusk, we do not perceive a change in the colour of objects around us. The process involved is known as *chromatic adaptation* and the result is colour constancy. This process also occurs when moving between spaces lit with differing electric illumination.

Lighting in the British Museum

The British Museum is a large museum composed of over 50 different gallery spaces, covering many themes. These galleries employ a wide range of lighting technologies, including daylight ('pure', filtered and diffused) and many different electrical light sources. It is possible that this is due to a combination of factors; an ongoing process of renewal (as galleries are refurbished their lights are retrofitted with new/readily available technology), aesthetic considerations, conservation considerations and/or minimising energy use. To most visitors these variations in lighting colours will go unnoticed, in part due to their colour constancy mechanisms, but it is possible that there are subtle unconscious effects.



Lighting in the British Museum.

- 1: Reflected daylight at the south stairs inside the museum.
- 2: 'Greenish' daylight in the 'Great Court'.
- 3: 'Orange-ish' light in the gift shops within the 'Great Court'.
- 4: East facing daylight through automated blinds in Room 1 'Enlightenment'
- 5: Extreme yellow/orange illumination in the Room 24 'Living and Dying'.
- 6: North facing daylight in Room 33 'China, South and Southeast Asia. The Joseph E Hotung Gallery'.

'Aperture Intrusions'

At the museum there are situations where juxtaposing rooms are lit with white light of varying colour, this lighting being visible simultaneously through apertures such as doors or windows.

A prime case study of this is in Room 24 at the museum where the ambient artificial lighting is warm (orange/yellow) but the neighbouring space of the Great Court, visible through a door



Room 24 'Living and Dying' with illumination from the Great Court visible through the door and windows.

and large windows, is (unusually and unexpectedly) rather green in colour, its lighting provided by daylight through a glass ceiling. At the opposite end of Room 24 there is a sightline up into Room 33 which is lit by north facing daylight, providing an altogether different reference light. The visual effect of this is a subjective matter, but it could be hypothesized that this lighting situation might lead to Room 24 being viewed as 'dimly' lit, despite light levels which would normally be considered adequate. Observations of visitor movements reveal that visitors tend to focus in the middle of the



North entrance to Room 4, 'Egyptian Sculpture'.

room and refrain from straying to the cabinets further from the central axis of the room.

It should be stressed that a juxtaposition of contrasting illuminations is not necessary an undesirable situation. In other locations within the museum lighting contrasts differentiate separate spaces, dividing galleries from each other and from access areas.

Future work

So far only preliminary observations have been made. Further observations and subsequent studies may include exploring or quantifying the effect of aperture intrusions, investigating further the green appearance of the illumination in the Great Court, looking at how purposeful lighting variation may be used to enhance visitor experience, or the investigation of automated adaptive light sources for museum use.