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# ILLUMINATION OF CULTURAL HERITAGE ARTIFACTS IN AN ETHIOPIAN MUSEUM: CONSIDERATIONS FOR OLDER ADULTS

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## **Illumination of Cultural Heritage Artifacts in an Ethiopian Museum: Considerations for Older Adults**

### **Synopsis:**

This case study describes and assesses the current illumination of cultural heritage artifacts exhibited or stored in an important Ethiopian museum. The needs of two older adult stakeholder groups, museum employees, and domestic and international visitors were considered.

Abstract

### **Illumination of cultural heritage artifacts in an Ethiopian museum: Considerations for older adults**

This case study describes and assesses the current illumination of cultural heritage artifacts exhibited or stored in an important Ethiopian museum. The needs of two older adult stakeholder groups, museum employees, and domestic and international visitors were considered. Ethiopia possesses a rich cultural heritage related to its diverse ethnic groups and remarkable history, which is manifested in museum exhibits containing unique and irreplaceable secular and religious artifacts (e.g. royal costumes, historic artwork and intricately decorated manuscripts from the 15<sup>th</sup> century). In Ethiopia, as well as in the United States, many older adults work at museums or visit museums. Both groups need to inspect artifacts. Older adult populations are generally growing. Older adults require more and better illumination to see exhibits with the same clarity as younger individuals. However, fragile artifacts, including textiles and works on paper, may become damaged by the quantity of light exposure (lux), hours of light exposure (lux hours) and type of light source (daylight or electric light). Both the museum's exhibit and support areas were observed by the researchers and photo-documented in situ by a lighting expert. Observations of the museum's existing lighting solutions were compared to two industry standards: 1. Lighting for museum historic collections and 2. Lighting recommendations for exhibits viewed by older adults. The existing illumination for three museum criteria: 1. *economic* (e.g. energy consumption), 2. *safety* (e.g. potential for damage via light exposure), and 3. *function* (e.g. accessibility and visibility of artifacts) were examined. The museum's electric light sources were identified as relatively energy-inefficient. The sources were incandescent and linear fluorescent, and these sources contained limited to no light shielding or other protection for the artifacts. These light sources revealed details of the exhibited artifacts to viewers yet are anticipated to cause fading or other damage long term. An abundance of unfiltered windows were also observed which are anticipated to provide same. While the use of "daylight harvesting" from windows is substantially more sustainable and economical than electric light, the use of untreated windows is not recommended for museums. Further, electric lighting was only controlled manually, and no provisions for occupancy sensors or other automatic controls to limit unnecessary light exposures to artifacts were found. Some areas were over-illuminated indicating waste and potential artifact damage. Other areas were under-illuminated, some with flickering bulbs and other maintenance problems, indicating a need to better support viewing by older adults. This field study's findings begin to fill gaps in the literature, raise awareness of concerns for the preservation of cultural artifacts, and may inform future lighting design plans for Ethiopia's growing museum. It may also advise cultural tourism industries for the growing global population of older adults.