

| FORMAT | | |
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| 1. Name of resource | Rethinking Lighting in Museums and Galleries | |
| 2. Location | https://www.arup.com/perspectives/publications/promotional-materials/section/rethinking-lighting-in-museums-and-galleries | |
| 3. Alternative location | | |
| 4. Author[s] | ARUP | |
| 5. Publisher/producer/host | ARUP | |
| 6. Year | | |
| 7. Suggested citation | ARUP. Rethinking Lighting in Museums and Galleries. ARUP, available at https://www.arup.com/perspectives/publications/promotional-materials/section/rethinking-lighting-in-museums-and-galleries | |
| 8. Languages in which available | English | |
| 9. Geographic area resource relates to | Global | |
| 10. Does the resource relate to a specific time frame? | | |
| 11. Type | Report | |
| | Toolkit/Framework/Roadmap | Yes |
| | Sign-post to other resource (database) | |
| | Case studies | Yes |
| | Other | |
| 12. If this is part of an initiative, what is the initiative? | | |
| COLLECTIONS AND COLLECTIONS-BASED INSTITUTIONS | | |
| 13. Explicit links to collections | Yes | |
| 14. Explicit links to museums/libraries/archives | Yes | |
| 15. Types of institutions the resource covers | Museums | X |
| | Archives | X |
| | Libraries | X |
| | Other | X |
| 16. Does the resource relate to specific disciplines? | Arts, humanities and social sciences: philosophy, psychology, religion, social sciences, law, politics, language, arts and | X |

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| | recreation, architecture, literature, history, geography and ethnology, anthropology, archaeology | |
| | Science, natural history, technology, medicine, engineering, manufacturing | X |
| 17. If no explicit links to collections, justification for inclusion | | |

HOW IT CONTRIBUTES TO SUSTAINABLE DEVELOPMENT

18. Collections-related activities the resource relates to (mark all that apply)

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| Develop collections to protect and safeguard wider cultural and natural heritage more effectively , for example by targeting collecting to threatened forms of heritage in strategic ways | |
| Use collections to promote learning and educational opportunities that contribute to sustainable development more effectively , for example education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development and/or skills development relating to collections | |
| Use collections to promote cultural participation/social inclusion more effectively , for example by reducing barriers to participation, to ensure no-one is 'left behind' | |
| Use collections to promote sustainable tourism more effectively , for example by developing new products based on local cultural heritage, and/or considering the rights of stakeholder groups in relation to collections | |
| Use collections to support research that contributes to sustainable development (including all forms of personal and self-directed research at all levels that make use of stored collections) more effectively, for example by providing effective facilities, collections and information to meet researchers' needs | |
| Make decisions around collections that contribute to sustainable development more effectively | |
| i. employment (recruiting, staff training, staff safety) | |
| ii. energy consumption, greenhouse gas emissions, reduction, monitoring and reporting | X |
| iii. waste management and reduction of waste | |
| iv. transport (forms of transport, energy use) | |
| v. commercial activities including copyright and IP | |
| vi. governance and management | |
| vii. security, disaster preparedness and risk reduction | |

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| Direct external leadership, partnerships and collaborations towards sustainable development more effectively , for example by developing impactful partnerships | | |
| 19. Does the resource relate clearly to any international conventions (mark all that apply)? | | |
| Culture conventions: | | |
| 1952, 71 Protection of Copyright and Neighbouring Rights | | |
| 1954 Protection of Cultural Property in the Event of Armed Conflict | | |
| 1970 Fighting Against the Illicit Trafficking of Cultural Property | | |
| 1972 Protection of the World Cultural and Natural Heritage | | |
| 2001 Protection of the Underwater Cultural Heritage | | |
| 2003 Safeguarding of the Intangible Cultural Heritage | | |
| 2005 Protection and Promotion of the Diversity of Cultural Expressions | | |
| Rio Conventions: | | |
| Convention on Biological Diversity (CBD), Convention to Combat Desertification (UNCCD), Framework Convention on Climate Change (UNFCCC) | | X |
| AIMS AND CONTENT | | |
| 20. What issues does the resource aim to address? | “Why revisit lighting? Museums and galleries consume significant amounts of energy to maintain an internal environment to protect and preserve their collections. The use of lighting within both exhibition and back of house areas can account for 20% of this energy consumption. By targeting this lighting energy demand, significant energy savings can be made.” [p.6] | |
| 21. Intended audience of resource | [Those involved in commissioning, adapting and developing lighting and lighting systems in exhibitions, galleries and back-of-house spaces in museums and galleries] | |
| 22. Process of development | | |
| 23. Organisation/structure/contents | Why revisit lighting? About lighting at ARUP Daylight for museums and galleries Case study Electric lighting for museums and galleries Case study Selected experience Selected museum and gallery refurbishment projects Selected museum and gallery exhibition lighting design projects Selected light art and artist collaboration projects Selected museum and gallery new-build projects | |
| FRAMEWORKS | | |

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| 24. Framework structure | For each section, a short narrative is followed by a list of benefits and a case study. |
| 25. Relevant policy considerations | No |
| 26. Resources for implementation identified | No |
| 27. Specific assessment points/indicators/milestones/action plan for monitoring | No |
| 28. ASPECTS OF SUSTAINABILITY COVERED BY RESOURCE (mark all that apply) | |
| People (social sustainability) | |
| Planet (environmental sustainability) | X |
| Prosperity (economic sustainability) | |
| Peace | |
| Partnerships | |
| 29. CROSS-CUTTING CONSIDERATIONS COVERED BY RESOURCE (mark all that apply) | |
| Gender perspectives | |
| North and South perspectives | |
| HOW THE RESOURCE CONTRIBUTES TO AGENDA 2030 AND THE SDGs | |
| HOW AGENDA 2030 AND THE SDGs FEATURE IN THE RESOURCE | |
| 30. SDGs and Agenda 2030 specifically mentioned? | No |
| 31. SDGs specifically mentioned? | No |
| 32. SDG targets specifically mentioned? | No |
| 33. SDG indicators specifically mentioned? | No |
| SDGs AND SDG TARGETS AND LINKAGES | |
| 34. Comments on SDG linkages | The resource can help collections-based institutions to consider lighting approaches that provide a good-quality visitor experience while reducing environmental impacts. This contributes to SDGs 7.2 (adopting renewable energy sources), 7.3 (increasing energy efficiency), 9.1 (developing sustainable infrastructure), 9.4 (upgrading infrastructure to be efficient and sustainable), 11.6 (reducing the environmental impact of cities, including air quality), 12.2 (sustainable use of natural resources), 12.5 (reducing waste |

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| | generation) and 13.3 (which includes improving institutional capacity o contribute to climate action). |
| 35. SDGs and SDG targets the resource helps advance | |
| SDG 7. Ensure access to affordable, reliable, sustainable and modern energy for all 7.2 By 2030, increase substantially the share of renewable energy in the global energy mix | Proportion of energy that comes from renewable sources. Date to achieve net zero, and milestones towards that date. |
| SDG 7. Ensure access to affordable, reliable, sustainable and modern energy for all 7.3 By 2030, double the global rate of improvement in energy efficiency | Reduction in energy use. Upgrade of old equipment to more efficient equipment. Uptake of renewable sources of energy. |
| SDG 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation 9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all | Development of research-useful collections to support reliable, sustainable and resilient use by researchers and others. Number and proportion of collections facilities and stores that support economic development and human well-being. Number and proportion of collections facilities and stores that provide affordable and equitable access for all. Investment in collections facilities. Inclusion of collections information in regional and transborder initiatives, notably via digital access for discoverability. |
| SDG 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation 9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and | Number and proportion of collections facilities that: 1. make efficient use of resources, with an ongoing drive for efficiencies and reductions in energy use and waste of all forms. 2. use clean and environmentally sound technologies, including climate-friendly energy sources and materials, with an ongoing commitment to reduce greenhouse gas emissions and waste of all forms. |

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| <p>greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities</p> | <p>3. adopt and/or prioritise collections-related processes and practices to reduce greenhouse gas emissions and waste of all forms.</p> |
| <p>SDG 11. Make cities and human settlements inclusive, safe, resilient and sustainable 11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management</p> | <p>Plans in place to reduce negative impacts on air quality, and volume and forms of waste.</p> <p>Plans in place to eliminate waste of all forms as soon as possible.</p> |
| <p>SDG 12 Ensure sustainable consumption and production patterns 12.2 By 2030, achieve the sustainable management and efficient use of natural resources</p> | <p>Reduction of material footprint in terms of reductions in consumption of biomass, fossil fuels, metal ores and non-metal ores.</p> |
| <p>SDG 12 Ensure sustainable consumption and production patterns 12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse</p> | <p>Quantity and reductions in quantity of waste of all kinds, including avoidance/prevention of waste production, reuse, and recycling. Quantity of material recycled in comparison with quantity sent to landfill. Increases in recycling rate in comparison with landfill.</p> |
| <p>SDG 13. Take urgent action to combat climate change and its impacts 13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning</p> | <p>Plans in place to enhance positive contributions to addressing climate change through use of collections. Plans in place to ensure collections, collections institutions and broader society can adapt effectively to climate change.</p> <p>Plans in place for effective education and awareness raising on climate change mitigation, adaptation, impact reduction and early warning.</p> <p>Plans in place to reduce negative contributions of collections-related functions, e.g. measuring greenhouse emissions with plans and targets in place to reduce them.</p> |

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