

<b>FORMAT</b>		
1. Name of resource	<b>STiCH: Sustainability Tools in Cultural Heritage</b>	
2. Location	<a href="https://stich.culturalheritage.org/">https://stich.culturalheritage.org/</a>	
3. Alternative location		
4. Author[s]	S. Nunberg, M. Eckelman, S. Sutton and S. Sanchez	
5. Publisher/producer/host	STiCH	
6. Year	2021	
7. Suggested citation	STiCH: Sustainable Tools in Cultural Heritage, available at <a href="https://stich.culturalheritage.org/">https://stich.culturalheritage.org/</a>	
8. Languages in which available	English	
9. Geographic area resource relates to	US and Canada, but with global relevance [although the emissions for particular products may be different in different countries]	
10. Does the resource relate to a specific time frame?	No	
11. Type	Report	
	Toolkit/Framework/Roadmap	
	Sign-post to other resource (database)	
	Case studies	Yes
	Other	Yes (web-based tool)
12. If this is part of an initiative, what is the initiative?		
<b>COLLECTIONS AND COLLECTIONS-BASED INSTITUTIONS</b>		

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. Types of collections/disciplines the resource covers	Arts, humanities and social sciences: philosophy, psychology, religion, social sciences, law, politics, language, arts and recreation, architecture, literature, history, geography and ethnology, anthropology, archaeology	X
	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)

<b>Develop collections to protect and safeguard wider cultural and natural heritage more effectively</b> , for example by targeting collecting to threatened forms of heritage in strategic ways	
<b>Use collections to promote learning and educational opportunities that contribute to sustainable development more effectively</b> , 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	

<b>Use collections to promote cultural participation/social inclusion more effectively</b> , for example by reducing barriers to participation, to ensure no-one is 'left behind'	
<b>Use collections to promote sustainable tourism more effectively</b> , for example by developing new products based on local cultural heritage, and/or considering the rights of stakeholder groups in relation to collections	
<b>Use collections to support research that contributes to sustainable development</b> (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)	X
ii. energy consumption, greenhouse gas emissions, reduction, monitoring and reporting	X
iii. waste management and reduction of waste	X
iv. transport (forms of transport, energy use)	X
v. commercial activities including copyright and IP	
vi. governance and management	
vii. security, disaster preparedness and risk reduction	
<b>Direct external leadership, partnerships and collaborations towards sustainable development more effectively</b> , for example by developing impactful partnerships	
<b>19. Does the resource relate clearly to any international conventions (mark all that apply)?</b>	
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
<b>AIMS AND CONTENT</b>	
<p><b>20. What issues does the resource aim to address?</b></p>	<p><b>“A life cycle assessment (LCA) Carbon Calculator and Library of Case Studies and Information Sheets developed to help cultural heritage professionals make educated, sustainable choices to lower the environmental impact of their work.</b></p> <p><b>Life Cycle Assessment (LCA) sets a framework for quantifying environmental impacts of systems and products. It focuses on a specific question concerning the environmental impact of a product or action and can encompass any or every phase of its lifecycle. Engineers use LCA software and databases to analyze the items and arrive at quantitative results. A successful collaboration between the engineer and the client allows for design of a study with greatest relevance to the field. LCA has been used across all types of sectors to inform procurement decisions, and provides the scientific basis for all carbon, water, and environmental footprinting.”</b></p>
<p><b>21. Intended audience of resource</b></p>	<p>[Cultural heritage professionals such as conservators, art handlers, artists, registrars, archivists, and curators]</p>
<p><b>22. Process of development</b></p>	<p>“The first introduction to LCA for cultural heritage preservationists in the United States began with conservator Sarah Nunberg and engineer Matthew Eckelman’s initiatives in 2012 when Nunberg invited Eckelman as the introductory lecturer at the AIC Albuquerque Annual Meeting Sustainability Committee Luncheon. Starting in 2013 they worked closely with Pamela Hatchfield and the MFA Boston, providing scenarios for six LCA case studies. Nunberg and Eckelman were joined by museum professional Sarah Sutton in 2016. The project earned a Tier I 2017-2019 National Endowment for Humanities (NEH) research grant awarded to The Foundation for the American Institute for Conservation</p>

	(FAIC). In 2020 the project was awarded a Tier II NEH Research and Development Grant, which has funded the STiCH project. At this time PhD candidate Sarah Sanchez joined the project in partial fulfillment of her dissertation. Together the team has developed STiCH.” [About Us]
23. Organisation/structure/contents	<b>Home</b> <b>Carbon calculator</b> [browse or search for materials, which returns the CO <sub>2</sub> equivalent per quantity used] <b>Case studies</b> Materials Treatments Buildings and exhibitions <b>Information sheets</b> <b>About us</b>
<b>FRAMEWORKS</b>	
24. Framework structure	
25. Relevant policy considerations	Yes
26. Resources for implementation identified	Yes
27. Specific assessment points/indicators/milestones/action plan for monitoring	Yes
<b>28. ASPECTS OF SUSTAINABILITY COVERED BY RESOURCE (mark all that apply)</b>	
People (social sustainability)	
Planet (environmental sustainability)	X
Prosperity (economic sustainability)	X
Peace	
Partnerships	
<b>29. CROSS-CUTTING CONSIDERATIONS COVERED BY RESOURCE (mark all that apply)</b>	

Gender perspectives	
North and South perspectives	
<b>HOW THE RESOURCE CONTRIBUTES TO AGENDA 2030 AND THE SDGs</b>	
<b>HOW AGENDA 2030 AND THE SDGs FEATURE IN THE RESOURCE</b>	
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
<b>SDGs AND SDG TARGETS AND LINKAGES</b>	
34. Comments on SDG linkages	<p>The resource can be used to support action in support of a number of SDG targets, including: 4.4 (skills for work), 4.7 (Education for Sustainable Development) and 13.3 (education and awareness for climate action), through support for staff skills.</p> <p>Information contained on chemical data safety sheets to be found from the Carbon Calculator can be used to support SDG 3.9 (ensuring safe working conditions) and 8.8 (labour rights, and safe and secure working environments).</p> <p>Reducing the environmental impact of operations supports SDGs 6.3 (reducing aquatic pollution), 6.4 (efficient use of water), 7.3 (improve energy efficiency), 8.8 (decoupling economic activities from environmental harm), 9.4 (retrofit industries and adopt sustainable processes), 11.6 (reduce the environmental impact of cities), 12.2 (sustainable and efficient use of natural resources), 12.4 (sound management of wastes across their life cycle), 12.5 (reducing waste generation), 12.6 (adopting sustainable practices and sustainability reporting), 12.7 (sustainable procurement), 13.3 (enhancing institutional capacity to act on climate change), and 14.1 (reducing marine pollution of all kinds).</p>

### 35. SDGs and SDG targets the resource helps advance

<p><b>SDG 3: Ensure healthy lives and promote well-being for all at all ages</b> 3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination</p>	<p>Plans, policies and procedures in place to prevent harmful exposure to hazardous chemicals associated with collections, or collections-related activities.</p> <p>Plans, policies and procedures in place to ensure hazardous chemicals and other forms of pollutant are properly managed and disposed of, to prevent release into the natural environment.</p>
<p><b>SDG 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all</b> 4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship</p>	<p>Number of young people and adults in skills-development activities and programmes drawing on collections, for employment, decent jobs and entrepreneurship</p> <p>Increase in number of young people and adults in such programmes</p> <p>Number and proportion of staff who have received training in the last year, to better support their contribution to the SDGs.</p> <p>Programs and processes in place to ensure the availability of a skilled workforce.</p>
<p><b>SDG 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all</b> 4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through 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</p>	<p>Numbers of people in each type of programme drawing on collections from different demographic groups.</p> <p>Increases in numbers of people in each type of programme from different demographic groups.</p> <p>Proportion of people involved in such programmes in relation to overall audience size.</p> <p>Evidence that learners have acquired knowledge and skills to promote sustainable development.</p>

<p>and of culture's contribution to sustainable development</p>	
<p><b>SDG 6. Ensure availability and sustainable management of water and sanitation for all</b> 6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially</p>	<p>Amount of pollutants, and reduction in pollutants, to water systems.</p> <p>Plans in place for the identification, reduction, replacement and recycling of hazardous chemical and materials, to prevent their release into water systems, with plans to eliminate their use as soon as possible.</p>
<p><b>SDG 6. Ensure availability and sustainable management of water and sanitation for all</b> 6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity</p>	<p>Reductions in water use, increase in water recycling, preventing water shortages in vicinity.</p> <p>Information on, programmes relating to, and partnerships relating to water use drawing on collections and collections-based institutions in place, to support efficient use of water.</p>
<p><b>SDG 7. Ensure access to affordable, reliable, sustainable and modern energy for all</b> 7.3 By 2030, double the global rate of improvement in energy efficiency</p>	<p>Reduction in energy use.</p> <p>Upgrade of old equipment to more efficient equipment.</p> <p>Uptake of renewable sources of energy.</p>
<p><b>SDG 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</b></p>	<p>Plans in place to increase resource efficiency, reduce consumption, and to decouple economic growth from environmental degradation.</p>



<p>8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-Year Framework of Programmes on Sustainable Consumption and Production, with developed countries taking the lead</p>	
<p><b>SDG 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</b>        8.8 Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment</p>	<p>Number and proportions of staff working with collections in safe and secure working environments.</p> <p>Number of accidents and other health and safety incidents reported.</p> <p>Training and support provided for staff to ensure their well-being, health and safety.</p> <p>Education, awareness-raising and partnership programmes drawing on collections that address labour rights, notably those of migrant workers and others in precarious employment.</p> <p>Reduction of numbers and proportions of staff on short-term or zero-hours contracts.</p> <p>Fair pay policies and procedures in place to prevent exploitation.</p> <p>Procurement policies that ensure that collecting institutions make use of people who are in decent employment, and that avoid exploitation throughout the supply chain.</p>
<p><b>SDG 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation</b>        9.4 By 2030, upgrade infrastructure and retrofit</p>	<p>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.</p>

<p>industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities</p>	<p>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.</p> <p>3. adopt and/or prioritise collections-related processes and practices to reduce greenhouse gas emissions and waste of all forms.</p>
<p><b>SDG 11. Make cities and human settlements inclusive, safe, resilient and sustainable</b> 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><b>SDG 12 Ensure sustainable consumption and production patterns</b> 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><b>SDG 12 Ensure sustainable consumption and production patterns</b> 12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on</p>	<p>Quantities, and reduction in quantities, of chemicals of all kinds, including chemicals used in maintenance of collections facilities, and chemicals used in care and preparation of collections, and all wastes throughout their life cycle, reducing release to air, water and soil.</p> <p>Plans in place to eliminate the use and release of hazardous chemicals and harmful wastes of all kinds into the natural environment as soon as possible.</p>

<p>human health and the environment</p>	
<p><b>SDG 12 Ensure sustainable consumption and production patterns</b> 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><b>SDG 12 Ensure sustainable consumption and production patterns</b> 12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle</p>	<p>Clear visions, strategies and plans in place for all aspects of sustainability – environmental, social and economic (people, planet, prosperity)- across all areas of activity.</p> <p>Visions, strategies and plans relating to sustainability to be publicly available and incorporated into planning documents.</p> <p>Commitments to be in line with local, regional, national and/or international targets and ambitions.</p> <p>Incorporation of sustainability into reporting for funders and other stakeholders, including the public. Reporting to include commitments and progress towards targets.</p>
<p><b>SDG 12 Ensure sustainable consumption and production patterns</b> 12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities</p>	<p>Incorporation of sustainability considerations into procurement, in terms of advertisement and invitation to tender, contracts, and selection criteria for suppliers.</p>
<p><b>SDG 12 Ensure sustainable consumption and production patterns</b> 12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature</p>	<p><b><i>12.8.1 Extent to which (i) global citizenship education and (ii) education for sustainable development (including climate change education) are mainstreamed in (a) national education policies; (b) curricula; (c) teacher education; and (d) student assessment</i></b></p> <p>Extent to which global citizenship education and education for sustainable development (including climate change education) are mainstreamed in formal, informal and non-formal education programmes and activities drawing on and related to collections.</p>

<p><b>SDG 13. Take urgent action to combat climate change and its impacts</b> 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>				
<p><b>SDG 14 Conserve and sustainably use the oceans, seas and marine resources for sustainable development</b> 14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution</p>	<p>Number of collections-related programmes, for example research and education, that aim to reduce marine pollution.</p> <p>Quantity, and reduction, of waste of all sorts, with plans in place to eliminate waste of all sorts as soon as possible.</p> <p>Quantity, and reduction, of plastic waste, with plans in place to eliminate the production and release of plastic waste as soon as possible.</p>				
1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	