

Helping all US Museums

There are about 35,000 museums in the United States alone, according to a federal sponsored study by the Institute of Museums and Library Services (IMLS). They include significant buildings that can often be modern icons and historic treasures in major cities. Even smaller museums are trusted institutions acting as community anchors throughout the country.

To adequately address their sustainability footprint has been a challenge as there has not been a sufficiently organized effort to address museums' resource consumption, their facility size and their unique operating environments such as narrow ranges of humidity and temperature requirements. The total energy consumption of the museum sector is estimated to be 70 billion KBtu/year ($35,000 * 10,000 \text{sqft} * 200 \text{kbtu/yr} = 70,000,000,000 \text{kbtu/yr}$). US museums range from 50-350 Energy Use Intensity (EUI). This 7 multiples point to ample opportunities for efficiency upgrade and operational savings.

This project will knit together the various disparities and create a typology on a common platform that is free to users. Energy Star Portfolio Manager (ESPM) has the widest use in North America recording year-over-year energy and water consumption for buildings and this platform can calculate weather normalized Energy Use Intensity (EUI) for every building. It also allows for portfolio input and reporting. This project will further aggregate the museums as a project type.

The aggregation of 400+ museums will provide EPA a critical mass to start analyzing and calculating an Energy Star 1-100 score that is currently available to many building types in the US. Currently we have over 110 buildings expressing interest in Energy Star. On behalf of associations, this team, through the partnership of IFMA, IndigoJLD and USGBC, will distribute surveys to a random sample drawn from associations. The team, has the capacity to approach the major industry association leaders.

Scope of work:

- 1) Convene 400 museums in the US to take a leadership role and communicate the need to both save operational funds and cut carbon footprint. The communications through industry conference have already started and funding to expedite frequency of museum contact.
- 2) Provide benchmarking technical support such as ADVANCE programs of USGBC at the local level. Michigan Science Ctr received assistance through such an effort.
- 3) The team works with engineering advisory and museum representatives to devise a survey.
- 4) The data from the benchmarking effort will also be useful in the Energy Star survey. The recruitment of museum leaders will help with mentoring museums chosen in the random sampling.
- 5) The team will work with the associations to encourage full completion of the surveys and turn the data over to EPA for regression analysis.
- 6) The team will meet with the EPA team frequently during this process and will support communications back to the museum community
- 7) The team will support rollout of the Energy Star 1-100 score. This score will be freely available to any of the 35,000 museums in the US (To our knowledge, Canada is also embarking on a similar benchmarking effort)

A. Developing Global Museum Sustainability Awards

Museums have been sharing lessons learned globally over the past decade. IFMA has an opportunity to spearhead a global museum sustainability award with a modest cash prize to encourage innovation and facilitate communication of best practices. This will be done in partnership with other organizations such as IAMFA, USGBC and its international counterpart. The team, IFMA-MCIC, IndigoJLD, USGBC will create this program as a tool to raise awareness and foster efforts towards climate action and cultural masterplanning. Rewarding best practices and the cash prize will further raise awareness within the C-sites of museums. IFMA will leverage its press and media infrastructure and reach a large global audience.

Scope of work:

- 1) Create an advisory with association leaders in order to create the awards criteria and application process
- 2) Use the outreach period to build a critical mass of museums globally that care about climate action
- 3) Help cultivate internal working relationships between sustainability director, facility director, and leadership team
- 4) Adjudication period for jurors to meet in person and assess applications
- 5) Award ceremony in alignment with significant events. Media outreach

B. Developing Global Green Museums Metrics

Museums have a global focus because visitors tend to come from multiple countries and the exhibition collections can be on loan from international sources. The goal is to use USGBC's ARC platform to create a common safe space to build museum sustainability metrics tailored for this building type. Several countries have started inventorying carbon footprints of cultural institutions. The team, through IFMA-MCIC, IndigoJLD, USGBC, can draw from those results and begin bringing the available energy and water data into ARC.

In order to track carbon footprint, ESPM type of energy intensity data will be necessary for all museums around the world. The team, with the support of the grant, will create metrics such as indoor environmental quality that is important to the museum sector. The team also intends to partner with Google Arts and Culture group which has an international footprint.

Scope of work:

- 1) Those museums with 12 months of data have free access to ARC for the first 100 US museums. We can determine how many will receive free indoor air quality testing in the museum, depending on funding. (TVOC, CO2 and Relative Humidity)
- 2) Get the 300+ US LEED museums to benchmark on ESPM and then push data to ARC. They too can access indoor air quality testing at a reduced rate during a certain time frame. All 400+ LEED certified museums also have free access to ARC and same IAQ benefits.
- 3) Work with BRE to bring the 130+ cultural institutions in the UK into ARC. Provide IAQ testing as a bonus. Provide IAQ testing as a bonus.
- 4) Work with GBCAUS to bring 100 of Australian institutions into ARC. Provide IAQ testing as a bonus.
- 5) Work with HKGBC to bring 20 of Hong Kong institutions into ARC. Provide IAQ testing as a bonus.
- 6) Work with CAGBC to devise a strategy for Canadian museums as their federal govt survey may already have sufficient data availability. We can target 400 museums. Provide IAQ testing as a bonus for museums to participate.
- 7) Outside of US, Canada, and above, we could propose a green museum category to Google based on the engagement we have with these museums.
- 8) Develop and rollout of museum metrics country by country