

Ecosave Cashflow Positive Statement

Ecosave is uniquely positioned to help your museum address rising energy costs and inefficient building systems with project funding. The Ecosave Services Agreement (“ESA”) enables you to pay for system upgrades using the savings your project generates – savings that Ecosave guarantees. In addition to a more modern, efficient museum, the ESA will reduce ongoing operating expenses from day one without any capital outlay or debt added to your balance sheet. Ecosave is a full-service energy services company with core competencies in holistic, product-agnostic energy efficient retrofits, distributed generation systems, and analytics-driven automation – key components needed to transform your facility into a high-performance museum! Interested in reducing your utility spend and using the savings to upgrade your building? Contact us today! www.ecosaveinc.com



Greener Museums in 2021?

Excerpts from Q and A with Joyce Lee, FAIA, LEED Fellow, WELL AP



What is your favorite NY museum and why?

I have many favorite museums. Having served as Chief Architect for New York City OMB, I have always been an admirer of the Metropolitan Museum of Art, American Museum of Natural History, the Museum of Modern Art and the Whitney Museum. But there are plenty of wonderful museums north of the city that I love because of the stories they tell. The Everson in Syracuse; the Corning Museum of Glass near the Finger Lakes; the Baseball Hall of Fame in Cooperstown and the George Eastman Museum in Rochester. And as a mid-century modern fan, I took my

family to the Empire Plaza in Albany to soak in the sculptures and works of architecture. A socially distanced glorious afternoon was spent in Albany during this apple picking season.

Museums are known as energy intensive organizations, why and what can be done?

Yes, since the [publication of my benchmarking article](#) in late 2017, many museum professionals have been surprised to learn that a museum can be more carbon intensive than a hospital. Most museums have 24/7 collections rather than 24/7 patients. And the back-of-the-house staff sometimes have so many responsibilities that managing energy efficiency has not been a priority.

Thanks to the recent ASHRAE Chapter 24 guidance, there are many new advances. They include the range of temperature and relative humidity rather than an absolute number, like 70F or 50%. The gradual drifting has been well tested now for various material. The relaxation from strict numbers can save a lot of energy and money. Exhibit design including local micro-climate control display can also make a huge difference in galleries, taking human heat generation into account in high traffic areas.

Continuous air monitoring and AI driven analytics can pinpoint energy saving opportunities while improving air quality and ventilation. Finally, the design of large volume spaces, behind-the-scene spaces as well as the tightness of the building envelope can be defining factors if one is comprehensive about retrofits.

How can a museum that was built 100 years ago become a green building and become more sustainable?

Believe it or not, many older buildings constructed before the age of air-conditioning and elevators tend to be greener, more humane buildings than those in later eras. With a robust building mass and large windows, there is a lot to work with already. Remember this summer those buildings with operable windows and cross ventilation are those making headways too with fighting COVID?

Then there is the *time value of carbon*. The older the building, the lower the embodied carbon, which is a good thing. Every demolition creates enormous construction waste, some of which could be toxic, like asbestos, and much is still landfill bound. Retaining the building and creatively adapting it with today's functions have many promises for museums. In our recent UN Climate Week webinar, we highlighted MoMA's [embodied carbon video](#) in our [webinar booklet](#). It is an important reference.

What can a museum expect to save when they invest in green technologies?

We talk about the benefits of greening already, healthier for people and smarter for collections. It is not unusual to save 20-50% utility costs through an intensive analysis of the current operations.

Adding on to efficiency savings is the incorporation of state and local financial incentives. The New York State Energy Research and Development Authority (NYSERDA) has programs to help New York institutions. Take solar for example, a photovoltaic array could take Kwh off

more carbon intensive grid electricity. Both the Sciencenter in Ithaca and the New York Hall of Science have been early adopters of renewable energy.

Once the solar array is paid off, the institution could harness the clean electricity for free. It is very possible to generate green power cheaper than the museum buying it from the grid while getting very close to achieving carbon neutrality.

What are the short-term as well as long-term returns?

The short-term return is sending an immediate message to your visiting public and potential donors that the museum action is part of the solution, not part of the problem. The International Council of Museums (ICOM) has made a [sustainability resolution](#) in 2019 with the global museum community.

There are also immediate expense savings and capital avoidance savings like operating expense reduction and capital expenditure avoidance through a shared savings model, commonly called an Energy Services Agreement.

As a rule of thumb, for every \$100,000/year in energy savings (around 1/3 of annual bills), the museum could identify \$500,000 upfront capital improvement it does not need to fund. 20% of the \$100K/yr savings could go towards reducing annual museum budgets and 80% would go to the Service Agreement to equipment payments and comprehensive maintenance. Every capital plan or campaign should benchmark its annual energy and water bills and go through this exercise to maximize its year-over-year savings and long-term returns.

For museums who have made progress in reaching green building status, what is the next step?

This is by no means exhaustive; many in the [embedded list](#) already have LEED status by 2019 for design and construction. The goal now is to operate green, paying attention to all aspects of the institutional operations, from exhibits to catering, staff commute and air travel as well as managing waste and recycling. In addition to Energy Star Portfolio Manager, the international ARC platform is very comprehensive and aligns with private companies that report on ESG (Environmental, Social and Governance). I am encouraged to find many interested museums in the commonwealth countries as well.

As the building often account for 60 to 75% of the institution's carbon emissions, museums can now use energy service agreements and real time controls to make their sustainably built structures to operate green, while saving much needed funds to improve the financial bottom line.

Joyce Lee FAIA, WELL AP, LEED Fellow, is president of IndigoJLD Green + Health providing green health, planning, benchmarking, and design services with a focus on cultural facilities. Joyce served under Mayor Bloomberg as Chief Architect at the New York City OMB. Her work has received numerous awards from USGBC, AIA, and HHS. Above is an abridged version of an earlier interview. She can be reached at info@IndigoJLD.com