



Joseph Schaefer

In downtown Minneapolis, Peavey Plaza (foreground) was recently reopened after major renovations. The Minnesota Orchestra's home, Orchestra Hall, sits beside the plaza, which the orchestra helps maintain. The Minnesota Orchestra completed environmental upgrades of the hall that include LED lighting, native landscaping, and a stormwater retention tank.

Eco-Friendly Orchestras

At a time when climate change is making headlines, the environment and sustainability practices are growing concerns for the classical music field. How are American orchestras working to address their environmental impact, and what kinds of sustainability efforts are currently going above and beyond the call of duty?

by Brian Wise

When the Minnesota Orchestra introduced a “Bike to Orchestra Hall” program in 2017, a momentary culture clash emerged with the new breed of spandex-clad concertgoers. Writing on the transportation blog [Streets.mn](https://www.streets.mn), St. Paul-based cyclist Amy Gage described the “disapproving glances” from the “upper-crust audience” when she and her husband arrived at a concert in “full cycling regalia.”

Yet after some initial awkwardness, Gage gave the experience a favorable report, and for showing her helmet and biking gear at the box office, she received a 50 percent discount for a future concert. Orchestra officials say that about 20 cyclists have participated in the program in recent summers, a small but symbolic effort to get patrons out of their cars.

As every year brings alarming new record-high temperatures, a growing number of orchestra professionals acknowledge that the concert business—with its reliance on long-distance jet travel for conductors, plastic-heavy concessions, and energy-inefficient venues—may be aggravating climate change in its own way.

And it's not only concert presenters but composers who have at least considered cli-



Garry Gold Photography

Composer Viet Cuong takes a bow following the Albany Symphony's October 2018 world premiere of his *Re(new)al*, which explores water, wind, and solar power.

mate change as a lens for their work. John Luther Adams was an environmental activist for more than a decade before shifting his primary focus to composition. His orchestral work *Become Ocean*, which the Seattle Symphony premiered in 2013, in many ways set the current agenda, evoking “melting polar ice and rising sea levels,” according to the committee that awarded it the 2014 Pulitzer Prize for Music. Other contemporary composers drawn to climate issues include Matthew Aucoin (*Second Nature*), Ashley Fure (*The Force of Things*), and Lei Liang (*Hearing Seascapes*).

The Beethoven Pastoral Project, based in Bonn, Germany, has gathered more than 80 participating ensembles to perform Beethoven's Sixth (“Pastoral”) Symphony in an effort to call attention to environmental sustainability; among the participants is the Greenwich Village Orchestra in New York City. Last July, the Dream Unfinished, a New York-based orchestra focusing on social-justice issues, looked at the socioeconomic impact of climate change through new orchestrations of works by Laura Kaminsky, Roberto Sierra, Harry Burleigh, and other composers.

A handful of European orchestras have been out front in seeking to reduce their environmental impact, including Sweden's Helsingborg Symphony Orchestra, which in 2019 announced it would cease to use

air travel to bring in soloists and conductors, turning instead to train or boat, and the Orchestra of the Age of Enlightenment, which this winter traveled by train, rather than plane, for its winter tour to Poland and Hungary. The London-based period ensemble claimed that this move cut its carbon dioxide impact by about



Ethan Leves

Lucas Richman, music director of the Bangor Symphony Orchestra in Maine, with the score for *The Warming Sea*, his new orchestral work that reflects on climate change. The Bangor Symphony partnered with the Maine Science Festival to commission the work.

15,000 metric tons—the equivalent of the annual energy use of 6,300 homes.

In the United States, where efficient, high-speed rail infrastructure lags far behind Europe, there is a growing focus on making hall operations more sustainable. Though comparable data on American orchestras is lacking, a 2019 study of some 747 British arts organizations found that 81 percent of their carbon footprint

comes from the electricity used to power their buildings, whether concert halls, museums, or libraries. Among the other top contributors to greenhouse gas emissions in the U.K. are waste disposal (11 percent), touring (3 percent), and business travel (3 percent).

To reduce the amount of energy used, “for any concert hall, the first place you look is energy efficiency,” says Chiara Badioli, Knowledge and Sector Intelligence Lead for Julie's Bicycle, a London-based environmental nonprofit, which conducted the study for Arts Council England. “Can you reduce the amount of energy that you use? Generally speaking, yes, you can. The second step is to get renewable electricity. Either generate your own, buy it from a [renewable-energy] supplier, or get renewable energy certificates to cover the amount that you are using. It's all about helping to shift to renewable energy.”

Sustainable Concert Halls

One shift to renewables has occurred at Davies Symphony Hall, home to the San Francisco Symphony, which in 2013 installed a 558-panel solar array on its roof, providing about 15 percent of the hall's electricity needs. This step enabled the

1980 building, which is owned by the city of San Francisco, to achieve Gold LEED certification in 2019. LEED—or Leadership in Energy and Environmental Design—is a rating system established by the nonprofit U.S. Green Building Council that measures a building's sustainability goals; its four rating levels are certified, silver, gold, and platinum.

San Francisco exemplifies a broader



Scott Strebble

Before a concert, Minnesota Orchestra President and CEO Michelle Miller Burns (at center) announced that Orchestra Hall had achieved a LEED Silver rating for environmental upgrades. She recalls, “There was just a whoop in the room.”

trend. Municipal governments and business groups have promoted green practices as a way to attract new businesses, cut maintenance costs, and protect the local air and water. In 2013, the St. Louis Symphony was one of 80 organizations to adopt a sustainability policy in response to a “green business challenge” organized by the St. Louis Regional Chamber. Changes at Powell Hall include the introduction of high-efficiency (LED) light bulbs, recyclable paper products, and an expanded bus program for patrons.

Similarly, DeVos Performance Hall, the 2,400-seat home to Michigan’s Grand Rapids Symphony, has undergone a series of upgrades intended to make it a zero-waste facility by 2025 and, eventually, carbon-neutral. “First we went after the low-hanging fruit,” says Eddie T.L. Tadlock, the assistant general manager of ASM-Global, which operates the venue. “You do your recycling. You switch out your lamps to LEDs. You put new flush valves in the restrooms. We cut our water usage in half in the performance hall. We recently moved towards completely compostable or recyclable materials in our concessions. It may not seem like a lot, but in the long run it is. All beer and wine is sold in cups made out of soy-based products, so they’re compostable.”

Tadlock reports that the new LED lighting will pay for itself in six months as a result of utility bill savings combined with rebates. DeVos Hall officials are also encouraging the Grand Rapids Symphony and other tenants to conserve paper by

promoting mobile app-based program books. (It’s worth noting that mobile devices, the Internet, and the systems supporting them account for 3.7 percent of global greenhouse emissions, according to some estimates.) There has been a 20 percent reduction in concert-related trash,

In the United States, there is a growing focus on making hall operations more sustainable.

partly as a result of reusing paper program books that would otherwise be discarded.

New concert venues are increasingly being built with sustainability as a top priority from the start, says Tom Whitaker, the Project Director of the Reach expansion at the Kennedy Center for the Performing Arts in Washington, D.C. Architects for cultural centers see this as “standard operating procedure,” he says. “They will typically propose buildings that are very sustainable.” The Reach, which opened in September 2019, is the first expansion



San Francisco Symphony

Davies Symphony Hall, home of the San Francisco Symphony, was built in 1980 but recently underwent environmental upgrades that earned the building Gold LEED certification.

in the Kennedy Center’s 48-year history. Designed by Steven Holl Architects with the architecture and design firm BNIM, it embeds three pavilions within the riverside landscape adjacent to the Kennedy Center and has achieved LEED Gold certification for its eco-friendly landscaping and energy and water efficiency. “Stephen Holl said he would like to aim for the highest LEED certification possible,” says Whitaker. “Once he was selected, the direction was the design team should focus

on achieving the highest rating possible.”

Similar goals have underpinned the development of Tanglewood’s Linde Center for Music and Learning, a four-building complex in Lenox, Massachusetts that opened in 2019 with various sustainable features, and Carnegie Hall’s studio towers renovation project, which received LEED Silver certification in 2015.

Badiali of Julie’s Bicycle stresses the importance of publicizing eco-friendly practices. “Whatever you do, make it visible, have that dialogue with your audience,” Badiali says. “Walk the walk, then talk the talk. As soon as someone enters your space you are saying as much about your



Stefan Cohen

Composer Adam Schoenberg (at left) takes a bow following the October 2019 world premiere of his *Losing Earth* percussion concerto by the San Francisco Symphony with (at center) soloist Jacob Nissly, the orchestra’s principal percussionist. The new score evokes climate change.

orchestra and how that space feels as you are with any kind of communication materials.”

When Orchestra Hall in Minneapolis achieved a LEED Silver rating for its 2019 upgrades, Minnesota Orchestra President and CEO Michelle Miller Burns announced it onstage before a concert. “There was just a whoop in the room,” she recalls. “I remember a gentleman in the middle of the main floor who just stuck his fist up in the air and went, ‘yeah!’” The certification, which followed a three-year retrofitting process, has involved “some upfront investment,” Burns said, but with the expectation for long-term cost savings. Among the retrofits are high-efficiency filtration, LED lighting, native landscaping, and a stormwater retention tank.



Taking a bow after the world premiere performance by the Albany Symphony of Viet Cuong's *Re(new)al* in October 2018 are (from left) Sandbox Percussion ensemble members Ian Rosenbaum, Victor Caccese, Jonny Allen, Terry Sweeney, and composer Viet Cuong. Albany Symphony Music Director David Alan Miller led the performance at the Palace Theatre.

Green Music

Just as upgrades like low-flow plumbing fixtures can help save on utility bills, environmentally-themed repertoire has allowed orchestras to tap funding or expertise from science-based organizations. In 2019 the National Symphony Orchestra premiered Lera Auerbach's *Arctica*, a meditation on the vulnerable state of the Arctic, co-commissioned by the National Geographic Society. As part of her research, Auerbach joined the Society on multiple trips to the Arctic Circle, where she learned enough Inuit to craft a libretto in the language. The work premiered in March 2019 to favorable reviews, and drew attention for the use of blocks of ice as percussion instruments.

Similarly, the Bangor Symphony Orchestra in Maine partnered with the

Maine Science Festival to commission *The Warming Sea*, by Lucas Richman, the orchestra's music director. The piece, whose March premiere was cancelled because of the COVID-19 pandemic, fea-

At one concert hall, new LED lighting will pay for itself in six months as a result of utility bill savings combined with rebates.

tures a women's chorus cast as sirens who intone a "song of climate change deniers," explains Richman. "My hope is that *The Warming Sea* will perhaps provide a platform for more discussion on what we can do" to slow further climate change.

Last season, New York's Albany Symphony introduced *Re(new)al*, a percussion quartet concerto by Viet Cuong, a 30-year-old, Princeton, New Jersey composer; the work's three movements explore water, wind, and solar power. The piece was commissioned by GE Renewable Energy, a division of General Electric that develops wind turbines, hydroelectric power, and solar panels, and which has

offices in nearby Schenectady, New York (the renewable focus suggests a marked shift from generations past, when GE was a notorious polluter of the region's water, including the Hudson River).

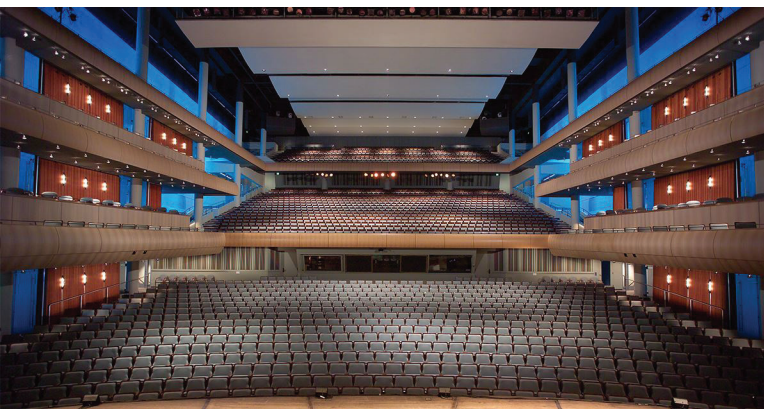
Climate change is of particular concern to millennials. The San Francisco Symphony last October introduced *Losing Earth*, a percussion concerto by 39-year-old Los Angeles composer Adam Schoenberg and featuring Jacob Nissly, principal percussion at the San Francisco Symphony. Schoenberg came to the



Eddie T.L. Tadlock, the assistant general manager of ASM-Global, which operates DeVos Performance Hall, the Grand Rapids Symphony's main performance venue, says that individual steps to reduce power consumption and waste "may not seem like a lot" but add up significantly in the long run.

theme after reading a *New York Times Magazine* article about the history of government inaction on global warming. "I just knew immediately that my piece was somehow going to be a response, not to the article per se, but to the idea of climate change and the uncertainty of our future," he says.

With its visceral evocation of a California coastline threatened by rising seas, *Losing Earth* also shows the power of a local angle to drive home a message. This can similarly apply to community engagement: In 2018, the New Bedford Symphony Orchestra in Massachusetts took up the cause of local marine habitats and beaches as part of its in-school partnership program, which reaches some 40 elementary schools. For its curriculum, the orchestra focused on recycling as it applies to both composers (as in Beethoven's reuse of musical materials)



Eco-conscious upgrades, including new LED lighting, are leading to cost savings at DeVos Performance Hall, home of the Grand Rapids Symphony.



One of the New Bedford Symphony's education programs in action. In 2018, its "Orchestra as Ecosystem" curriculum received the Massachusetts Secretary's Award for Excellence in Energy and Environmental Education.

and the environment (as when citizens reuse plastics that otherwise turn up on local beaches).

New Bedford Symphony Orchestra Education Director Terry Wolkowicz says that she saw an uptick in support from schools, including additional funding and other resources, after the science component was introduced. "We don't just come in and say, 'we're going to perform in your school,'" she notes. "We have shared learning objectives. This idea of finding authentic connections to other subject areas, especially science, seems to be growing and growing."

Rethinking Tours

Despite the efforts to improve concert hall sustainability and promote environmental programming, concert-related travel remains a persistent source of planet-warming greenhouse gases. While tours can contribute to an orchestra's financial bottom line, they are perhaps more important in elevating artistic profiles at home and abroad, offering musicians and staff fresh perspectives, and generating civic pride. All the same, orchestras are now considering those aims in the context of a new awareness of environmental impact.

Some tours go beyond the standard cultural-ambassador mission. In 2018, some 300 musicians, staff, and supporters from the Minnesota Orchestra traveled approximately 9,000 miles each way to South Africa, as part of a five-city tour



As part of its in-school partnership program, the New Bedford Symphony Orchestra in Massachusetts examined the idea of recycling—by composers in music and by individuals in daily life. Says Terry Wolkowicz, the orchestra's education director, "This idea of finding authentic connections to other subject areas, especially science, seems to be growing and growing."

there marking the centenary of Nelson Mandela, the country's former president. The tour—which included musical tributes to Mandela, youth orchestra collaborations, and visits to underserved neighborhoods of Soweto and Durban—went well beyond the conventional sprint and made more thoughtful connections,

built on an awareness of the country's historic divisions. (Before heading to South Africa, the orchestra performed its Mandela- and South Africa-related programming in Minneapolis with local partners, forging new bonds with hometown communities.) The tour set an ambitious international agenda that this year was expected to include a tour to Vietnam and South Korea, but the 2020 Asia tour was cancelled due to the coronavirus threat.

Neeta Helms, president of Classical Movements, the agency that organized the South Africa trip, says her company is "keenly aware" of the environmental impact of touring, particularly when it comes

to developing countries. "Unfortunately, there is not a viable way to plan a transcontinental concert tour without air travel," she states in an e-mail, "but we are committed to exploring ways to minimize the impact of this travel as much as possible. We are currently finding ways to incorporate carbon-offset costs into our budgets for our clients; already, we regularly recommend alternate

means of transportation and use trains, buses, or sometimes even boats where possible." (Carbon offsets, a method by which travelers or airlines fund the planting of trees or invest in emerging technology to make up for their share of jet fuel emissions, have stirred optimism but also some debate over their effectiveness.)

Jasper Parrott, the co-founder and executive chairman of the London-based



Tracy Salazar Photography

In March of 2019, the National Symphony Orchestra premiered Lera Auerbach's *Arctica*, a meditation on the vulnerable state of the Arctic, co-commissioned by the National Geographic Society. Teddy Abrams led the National Symphony Orchestra, the Washington Chorus, and Auerbach at the piano. Auerbach's score utilized blocks of ice as percussion instruments.



The Reach, an expansion of the John F. Kennedy Center for the Performing Arts that includes multiuse studios and meeting places, achieved LEED Gold certification for its eco-friendly landscaping and energy and water efficiency. Reach opened in September 2019.



Marketing materials for concerts featuring the world premiere in March of *The Warming Sea* at the Bangor Symphony evoke Maine's enduring connection to its rugged seacoast. Due to concerns about the coronavirus pandemic, the orchestra's March concerts were cancelled.

artist management agency HarrisonParrott, believes that tour schedules should be broadly refocused, away from linear city-to-city trips and instead around "clusters" of events in a given region. "I'm talking to managers and conductors who feel we need to get away from linear tours that are too long, not very efficient, and often very expensive," he says. "We should be aiming for residencies or semi-residencies. You base an orchestra in a particular city and work with one or two other nearby cities."

The 2019 Arts Council England environmental report found that music-based

groups (22 percent), and combined arts venues (22 percent). Not measured was the impact in comparison to, say, sports or popular music festivals.

Parrott, who wrote a column in *The Guardian* last December about classical music's role in the climate crisis, adds that there are no easy solutions when it comes to touring Asia, a vital emerging market. "We all have to be thoughtful and measured and seek to make solutions that would not do more harm than good," he says.

Other orchestra professionals believe

The League of American Orchestras successfully partnered with U.S. and international groups on regulations that improve travel for musicians with instruments while advancing conservation efforts.

ments containing fragments of endangered woods. The League of American Orchestras partnered with U.S. and international organizations that are parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) to successfully adapt uniform, consistent policies concerning travel with and trade of musical instruments. These regulations improve the mobility of performing artists, redirect enforcement resources to better support conservation, and advance critical conservation efforts while also supporting ongoing international cultural activity. (Visit the "Travel with Instruments" section of americanorchestras.org for complete information.)

Lucas Richman of the Bangor Symphony remembers a planning discussion about an elaborate gala scheduled the night before his piece on warming oceans was to get its premiere. A decision was quickly made to use biodegradable cups and cutlery. "These are definitely top-of-mind subjects," he says. "Especially when we are presenting a piece like this, we must be careful not to be hypocritical." **S**

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Tanglewood's Linde Center for Music and Learning, which opened in June of 2019 as the home of the Tanglewood Learning Institute in Lenox, Massachusetts, is among the new arts buildings designed with sustainable features.

organizations account for about 12 percent of the total carbon footprint released by all cultural organizations, far less than museums (representing 41percent), theater

that one should simply strive for as much consistency as possible. This may extend to matters as disparate as printing and shipping sheet music to the care of instru-

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