THE BOTTOM LINE

• Be intentional about your sustainability efforts — think triple bottom line — people, planet, profit.

• To get buy in, show the board how sustainability links to mission and core values first.

• Invest in assessment tools to measure success and plan for the future.

A student works in the campus garden at Millbrook School, where much of the produce used in the dining hall is grown. The garden occupies four acres adjacent to the dining hall. Photo courtesy of Millbrook School.
Successful efforts at sustainability are embedded in programming and measurable.

By Stacey Freed

When schools talk about sustainability, the conversation is not just about the environment.

We’ve been intentional about saying sustainability is equal parts environmental, community and financial. In other words, the triple bottom line — people, profit and planet,” explained Nikki Vivion, director of strategic initiatives and chair of the science department at Nightingale Bamford, a K-12 all-girls day school located in New York City’s Upper East Side.

How does an array of disparate projects, which might target any part of the triple bottom line, become a holistic sustainability program? And how do these projects or initiatives, sometimes with intangible outcomes that are difficult to measure, get buy-in from the business office? Four schools share their experiences in meeting the challenge of establishing intentional, cohesive and measurable sustainability programs.

Measuring Progress at Nightingale Bamford

When Nightingale Bamford considers an initiative, “we consider the cost of adoption — [in other words] making it a behavior in the community — and not as something extra,” Vivion noted. “It makes it more meaningful [in the] long term.”

In 2007, the school’s student-run Earth Club was formalized as the Environmental Board to oversee sustainability efforts. The Environmental Board works with the Sustainability Advisory Council, which consists of volunteer members representing a cross-section of departments and divisions. “The students figure out the need, what the school does well, what we want to do more of. They bring in people from outside organizations that we can learn from,” Vivion said. For example, each year on or around Earth Day, the school invited representatives from community organizations or city waste management operations, who have spoken about living a zero-waste lifestyle, green rooftops and hydroponics and renewable energy.

Recently, the student environmental board has been drafting a proposal for
Getting STARTed with the Green Schools Alliance Tool

In 2007, a group of 46 independent schools got together to create the Green Schools Alliance (GSA) as a way to consider sustainability efforts and talk about their activities.

Last year, with more than 13,000 members in 48 U.S. states and 91 countries, GSA launched START, Sustainability Tracking and Roadmap Tool. It enables schools to track and analyze their current levels of sustainability across a range of metrics and provides guidance to help schools meet their sustainability goals.

Through extensive research, GSA defined three markers for schools to be sustainable: physical place, educational programs (curriculum) and organizational culture and behavior. “If you weren’t affecting these three markers you weren’t practicing whole school sustainability,” said GSA Executive Director Arlae Castellanos.

“With START, schools begin with a qualitative survey to help us understand where you are on your sustainability journey,” Castellanos said. “Schools are given points for their effort, but the tool is more than a scorecard. GSA will help guide schools and teach them how to meet their goals.”

Looked at through the lens of the three markers, START covers 53 metrics such as social justice and equity, sustainable food service, buildings and grounds, transportation and purchasing. Within each of these areas are many other focused categories. Schools pay $15 a month to use START, but districts with multiple schools have much lower pricing. There is also scholarship money available for schools that need it.

Castellanos says that although the pandemic has created challenges, GSA is now slowly onboarding schools. “Schools are coming back and using START as a way to write up strategic planning for the year. Even if they’re not physically in school, they can create the framework for what they want to do.”

Students worked with the Nightingale director of facilities to connect with an environmental engineer who already has a relationship with the school. She volunteered to coach students through the process, including working with them on the initial preparation.

The green roof, which will have a longer lifespan than a traditional roof, is estimated to cost more than $75,000. The school is still determining how much will be saved in heating and cooling costs. Once funding is resolved, students will present the proposal to the board. One student is developing a green revolving fund in which projected savings for sustainable projects, like a green roof, will go back into the fund.

“Although it comes with a significant initial upfront cost to install, a green roof helps cool and insulate the building below and improves stormwater management, all of which result in a reduction of operating costs,” Vivion pointed out.

Measurement is what gives sustainability initiatives teeth, according to Frank Barros, chemistry teacher and sustainability coordinator at Nightingale. Barros connected the school with the Sustainability Tracking and Roadmap Tool (START), a high-performance, digital platform that Barros helped create with the Green Schools Alliance, a peer-to-peer network of member schools committed to reducing their greenhouse gas emissions and accelerating the implementation of sustainable solutions (read more about the Green School Alliance in the sidebar).

Based on a similar tool used by colleges and universities, START enables schools to track and analyze their current levels of sustainability across more than a dozen metrics and provides guidance to help schools meet their goals.

Still, there are costs associated with assessments and goal creation. “To ensure the school is meeting its energy needs and to regain its renewable energy certificate from the city may cost $5,000,” Vivion explained. “To assess diversity, equity and inclusion, which we see as a sustainable part of our school, and to create programs and initiatives around that and build in accountability, we estimate that will cost $5,000 to $8,000 over the next five years. Then to complete an inventory of significant air emissions will cost $30,000, a major operational cost that we will have to budget for way in advance.”

That process involves an inventory of significant air emissions from stationary sources at Nightingale or may verify that no such emissions are produced. Significant emissions include nitrogen oxides (NOx), sulfur oxides (SOx) and other standard categories of air emissions identified in environmental permits held by the institution, international conventions, and/or national laws or regulations.

Ultimately, the way to get support from the board and the business office, Barros says, is to work with the students to show the board how sustainability links to mission and core values first.

For example, in Barros’ environmental science class, the semester project was to gather data using START to get a baseline sustainability measure and then put together a proposal for a sustainability program. After students finished gathering the data, and before they put together the proposal, they had a class discussion on the importance of an organization’s mission and core values.

“When trying to convince an organization that changing behavior will be valuable, one’s argument must align with what the organization is trying to accomplish,” Barros said. “I made sure that the students put their proposal together with that context.”

Sustainability at The Northwest School

The Northwest School, a grades 6–12 boarding and day school in Seattle, Washington, has schoolwide environmental sustainability programming. It includes a monthly speaker series, an urban farm and garden, food purchased from local and organic farmers, a schedule of outdoor trips, and a weekly program in which all students and faculty clean and care for the school by doing chores such as vacuuming, cleaning bathrooms, tidying classrooms, caring for chickens and cleaning school buses.

“Caring for our immediate surroundings grounds our wider ethic of...”
environmental sustainability and helps build community,” said Jenny Cooper, director of environmental education and sustainability at The Northwest School. “It’s tempting to ask about the immediate and calculable financial return on initiatives, but it’s important to think of more long-term payback, which is difficult to calculate up front.”

She noted there are many intangibles — such as creating a tighter community and graduates who positively engage in environmental issues throughout their lives — that will have effects far beyond the school’s walls or bottom line.

Northwest is also invested in making their facilities more sustainable, an effort where payback can be more easily quantified. The school installed rooftop solar water heating when a new building was erected in 2014 that houses a dining hall, athletic facilities and black box theater.

Tony Kaufmann, director of facilities and transportation at Northwest, said there is not sufficient information yet to calculate the return on investment for the solar system, but its domestic hot water system is powered mostly by renewable energy.

In 2018, the school completed an LED lighting upgrade in the main school building with a payback of 2.7 years, and in 2020, the boilers in the main school building were replaced, which cost about $160,000.

“The school had a five-year strategic asset plan so we could take a methodical approach to forecasting capital replacements,” Kaufmann said. “We prioritized projects that were business critical and had the best opportunities for sustainable outcomes.”

When making projections, Kaufmann noted it is important to consider the total cost of ownership and not just the initial outlay.

“You end up reducing your operating costs with equipment that’s more efficient, and you also have to consider scheduling projects carefully so they don’t interrupt learning or working,” Kaufmann pointed out. “With new products you will avoid the costs of Band-Aid repairs, which is what typically happens to systems nearing the end of their service life.”

Kaufmann advised that training should also be factored in. “Smart buildings need smart operators, and the role of maintenance workers is evolving to be more technology oriented,” he said. “The school spent several thousand dollars in training. Sustainability isn’t just a chapter; it’s a primary discipline of what we’re trying to accomplish.”

The four new boilers increased efficiency from 70% to 98% with a 35% to 40% reduction in utility bills. Kaufmann estimates the payback period to be about four years.

Kaufmann uses the Energy Star Portfolio Manager to monitor systems and create goals for campus utility use. The school is following Seattle’s District 2030 initiative with the goal of reducing energy, water and transportation by 50% by 2030. He said school leaders are on board and understand that any new purchases must align with that initiative.

Northwest recently finished a campus master plan that has environmental sustainability at its core. That plan aims to create a campus that is a physical manifestation of the school’s mission and values, aiming to expand the campus in the most environmentally responsible way.

“While the master plan isn’t a schematic design, it does assume that we will have solar panels on all buildings, open green space and food growing space, and use materials that reduce greenhouse gas emissions,” Cooper said.

The plan also includes a study of Living Building Challenge design and performance elements — the most robust and cutting-edge environmental sustainability building certification,
“with a view to following those as we move into the phase of developing schematic designs over the coming years. With Living Building Challenge Certification, our campus buildings would not just be environmentally neutral, they could be regenerative.”

Northwest is also developing a greenhouse gas emissions reduction program with a goal to be carbon neutral by 2030. Being proactive, Kaufmann said, “gives us better outcomes and opportunities to develop the most sustainable options.”

Connecting with Nature at Millbrook School

At Millbrook School, a grades 9–12 co-ed boarding school in Millbrook, New York, nearly everything points back to the school’s core value of stewardship of the natural world, according to Chief Operating Officer Jeffrey Smith.

The 800-acre campus includes the Trevor Zoo, which has been part of the school since its founding in 1931. It houses more than 180 animals including 10 endangered species such as red pandas, two species of lemurs, red wolves, spotted newts and white-naped cranes. “The zoo is part of who we are and a great example of stewardship meets curriculum meets business office,” Smith declared. “Being a steward of the natural world is mission driven and not just programmatic.”

Other sustainability commitments include a 7-acre solar field that produces most of the school’s electrical needs. The school also chose to build a new girls dorm and dining hall to LEED gold standard and include geothermal heating.

Despite using legacy buildings constructed between the 1930s and the 1990s that still use oil for heat, the school committed to achieving carbon neutrality by 2020, according to Smith. Millbrook retrofitted buildings and purchased carbon offsets to help achieve its carbon neutrality goal. This accomplishment was announced on Earth Day 2020.

The school has seen immediate returns on its investments, especially, for instance, its solar field. “We locked in a rate of 7.5 cents per kilowatt hour, and I estimate the school has saved about $30,000 a year,” he
said. “[The returns from the solar field are] set aside in a green fund to use for other sustainability projects, such as purchasing the carbon offsets.”

Smith emphasized that saving money is not the point. “It’s my job to use our resources the best way to meet our mission,” he explained. “I’m not a fundraiser, but I think we’ve had success finding support for these projects by emphasizing they are part of our mission. Finding people to donate $3 million for a solar field so you can save money in your operating budget isn’t a winning strategy. Donors want to support the school’s mission. Talking about these things in that context has been really successful for us.”

Culture Shift at Dunn School

Dunn School, a grades 6–12 boarding and day school on 55 acres in Los Olivos, California, installed solar panels on its gymnasium at a cost of $246,000 in 2019. CFO Chad Stacy says Dunn’s annual utility savings is projected to be approximately $32,000.

“There’s a seven-year payback period on the initial investment, a 16% internal rate of return, and after 25 years of production, the school will gain over a million dollars,” Stacy noted. “The numbers would make business officers’ eyes light up.”

Stacy acknowledged it is a great start, but he’s not satisfied. “My ideal would be for the school to put a stake in the ground and make sustainability part of its core values and unique programming.”

Stacy is researching how other schools have made the journey to where he wants Dunn School to be. He has come to see that embedding sustainability into programming is the only way to achieve long-term change. “The main difficulty to getting there is that doing so requires a culture shift — probably one of the hardest things for any school,” said Stacy.

In addition to solar panels that produce 30% of the school’s electricity, Dunn’s sustainability program includes a pig food composting program, a newly created arboretum, and switching to all LED lights. Stacy also wants the school to produce 100% of its electricity through solar-generated power.

The annual rainfall in Los Olivos is only 10 inches, and Stacy wants to convert the school’s arid landscape to low-water plantings and native trees and shrubs. “It will make the campus beautiful, save us money on water and can be designed by the kids,” Stacy explained.

He believes the school is on the path to these changes. “We haven’t said out loud we are on a path, that’s a little bit of the egg coming before the chicken. But anecdotally, at least, parents and faculty are on board.”

He acknowledges that because he’s the CFO, he could control and direct the money and pat himself on the back. “But then I haven’t met my mission of educating kids and helping the community grow together,” he cautioned. “With any endowed institution, you’re telling your donors you’re going to be around forever. Your decision-making is about long-term, and forever is the longest term there is. Environmental sustainability goes hand-in-hand with institutional sustainability, and any endowed school not looking at long-term environmental sustainability is crazy.”

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