

Creating Learning Spaces that Educate and Inspire

Stacy Smedley & Ric Cochrane



Stacy Smedley is Chief Executive Officer of SEED Collaborative. Her “day job” is Director of Sustainability, at Skanska USA Building. Stacy has a degree in architecture and 13 years in the design and construction professions. Her resumé includes the first LEED for Homes Platinum certified project in Washington and the first project in the world certified under Living Building Version 2.0, the Bertschi School Living Science Building. At Skanska, Stacy is Director of Sustainability, leading sustainable initiatives and progressing sustainable construction methods. Stacy is committed to engaging her community in sustainable design and served as founding member of Washington Businesses for Climate Action, Membership Chair for Cascadia Green Building Council, Regional Emerging Professionals Recruitment Chair for USGBC, Sustainable Curriculum Consultant, and 2013 Scholar in Residence for the National Association of Independent Schools. She offers workshops to K-12 schools that engage students in applying sustainable principles to design spaces they can learn in and from. Stacy is a 2012 Living Building Hero.



What if my classroom was living?

What if my classroom got all of its energy from the sun, and its water from the rain? What if it was made of only healthy, nontoxic things? What if my classroom grew food for me to eat and taught me things? What if my classroom was living? This is what a SEED (Sustainable Education Every Day) classroom is and does.

SEED Collaborative is a social-purpose company committed to providing students and teachers with restorative, inspirational learning spaces that use the classroom as a teaching tool and enable diverse and flexible hands-on, experiential learning.

SEED’s founders led development of the fourth certified Living Building in the world — the Bertschi School Living Science Classroom. That experience, and the impact on the kids and teachers using the classroom, is the foundation of the SEEDclassroom: a classroom built for experiential, hands-on, sustainable learning and inspiration to empower and educate the next generation of leaders and environmental stewards.

We created the SEEDclassroom as a portal — the classroom itself

can and should be a tool for deep inquiry and exploration; every part is a spark of inspiration.

The structure and all systems in our classrooms are intentionally exposed so that students can see how the building functions, better understand the flows of energy and water, and recognize the material resources needed to create buildings. Energy and water meters and hand-pump faucets allow students to engage directly with the functions of the building to better understand how their actions impact the building, and the amounts of energy that are expended to move water and create a comfortable space. Energy meters are incorporated into math classes and used in lessons about climate change. Water catchment is used to examine the composition of rainwater, potable water, city supplied potable



Ric Cochrane is Chief Operations Officer at SEED Collaborative, whose “day job” is as Director of Milepost Consulting. Ric directs SEED operations and business development, forging key strategic partnerships and implementing building and programming initiatives. His passion for sustainability education is based in his own challenges learning in structured environments, and in his belief that systems-thinking provides both diverse opportunities and essential perspectives to help students learn in whatever ways are best for them. Ric is also a Director of Milepost Consulting, a management consultancy focused on transforming the built environment and power utility sectors to sustainable business models. Previously, Ric ran Preservation Green Lab, a national nonprofit that strengthens the fabric of communities by leveraging the value of existing buildings to improve environmental, social, and economic performance. Previous professional experience includes Program Manager for King County GreenTools, where he provided policy guidance for 39 King County jurisdictions and sustainable design consulting for County assets; sustainable design consulting and land-use planning with O’Brien and Company; and real estate development with Catapult Community Developers. Ric holds Masters degrees in both Urban Planning and Public Administration from the University of Washington, and was a 2008 Fulbright scholar in India.

water and greywater. These water sources can be used to water plants, or to raise salmon to see how the fish respond to, and grow differently in different water types. The list of opportunities presented by the SEEDclassroom is continuously growing and evolving as teachers and students explore systems and functions, and come up with additional lessons that we can collect and share.

We use the principles of the Living Building Challenge, rooted in the simple metaphor of a flower, as the basis for design of the classroom and education resources. Students are engaged early in the design and asked what they think a classroom would look and feel like if it acted like a flower. This means it should get all of its energy from the sun, and all its water from the rain and the surrounding site. It should be made of natural and healthy things,

and be something beautiful that makes them happy. We have binders full of these rich, unique, and beautiful student designs that we look to for inspiration. It’s amazing how freely kids can harness their creativity and individual brilliance when given an opportunity. SEED builds some of the students’ design ideas into each SEEDclassroom so there is a unique sense of ownership the moment students walk in and see their ideas realized.

Students are then encouraged to take active roles in monitoring and assessing energy and water performance and maintaining their classroom’s systems. Questions about how things work and where things come from invite explorations of sustainable practices at multiple scales, from the building itself, to the local ecosystem, to the planet. When students are able to pursue their own areas of inquiry, they stay engaged and take ownership.



[SEED Classroom at Phipps Conservatory and Botanical Gardens, Pittsburgh, PA](#)

At the same time, the small scale of our projects influences the ways that people consider the built environment. Our portable-scale classrooms are “seeds” that are planted to demonstrate what restorative design and construction can be, making sustainability more approachable.

When we think of a healthy learning space, we think of the whole system in which the people and structure are integral parts. This is the foundation of sustainability — each part of the system recognizing interdependence and responsibility for the health of the whole. Bit by bit, we are helping build that recognition by using the classroom as a tool to create, educate, and inspire.

We are motivated by many challenges:

- ▶ We know that the structured, homogenized public education system is not suitable for many kids, and that more flexible learning and teaching approaches are in demand.
- ▶ We see the rapid degradation of education facilities and the temporary fixes that are only exacerbating the problems.
- ▶ We see tremendous opportunity in using the space in which students learn and teachers teach as a living laboratory with multiple applied education opportunities.
- ▶ We want students to understand their roles and responsibilities in the world — to understand and

take ownership of the health of their communities and the ecosystems in which they grow up.

- ▶ We see gross inequality in education and broader social structures, and we want to democratize restorative design and construction approaches to help make communities healthy.

The classroom is the de facto hub of American social networks — students form their values at school; parents are invested in the quality of their kids’ educations; communities are defined by the quality of their schools. If the school is the hub, then through that there is potential to positively influence other

Bring Sustainable Education Every Day to Existing Schools

We recently completed an enrichment program at a public elementary school in Seattle, funded by the PTA, where we did two week segments focused on energy, water, and materials. We first grounded the kids in where our energy, water, and materials come from, why that might be good or bad, and how we might get each more sustainably. We had them brainstorm and draw how to make their school more sustainable, specific to energy, water, and materials. Then, for each subject area, we collaboratively created one strategy at the school: we connected a cistern to an existing portable classroom’s roof; and also plan to install new PVC-free, nontoxic carpet in an existing portable (we have the students color in the design and then our carpet manufacturer makes the carpet to match); and install an energy monitoring device in an existing portable for energy tracking. This was our first attempt at taking pieces of what a SEEDclassroom does holistically and applying it to an existing school infrastructure as a before-school enrichment program. The students who went through the program have asked if they can be our ambassadors and teach the rest of the kids at their school what they learned.



To address water use, a cistern and handpump were installed to collect water off the roof of a portable classroom.

RESOURCES

Living Building Challenge
living-future.org/lbc/about

Thinking in Systems
(Donella Meadows)
www.donellameadows.org/category/thinking-in-systems/

Science for All
teachscience4all.org

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The interior of a SEEDclassroom at Perkins School, Seattle, WA

aspects of our social and physical environments.

While our ambitions are mighty, we know that we must start small, and personal — each student must be allowed to engage with the system according to her or his unique learning style and interests. Our plan is very humble: to give every kid a chance to identify with the system around them, starting in the space in which they spend their days. Our classrooms and associated learning resources invite students to explore and seek understanding, and this personal connection often leads them to places and issues we couldn't anticipate or force on them, whether that's resiliency, biodiversity, or social equity. Teachers act as guides and co-explorers, promoting critical thinking and collaboration in problem-solving. From there, only good things can happen.

We have three classrooms in place, so our results are thus far anecdotal. A student in our first project asked, "Why can't every building be living?" and that is the most relevant outcome we can point to — and the most commonly voiced. Kids dig in when they are asked to solve problems; they think boldly and intuitively. Imagine if all kids were exposed to this type of learning and grew up thinking that all buildings should be living. Imagine if all students understood that our built and natural environments are interdependent, and that they have the power and inspiration to make these environments holistically restorative. Think about how much better off the world might be, for them and the generations that follow. That's what pushes us forward, and why every SEEDclassroom we build and student we impact matters so much.