

# Pairing design education and architecture: Linda Keane



Linda Keane, AIA, artist, architect and academic, is passionate about greening public imagination. She combines a regenerative architecture practice with creative media projects, critical writings and public workshops collaborating with diverse communities in the creation of transformative learning experiences and environments.

Linda is a co-founder of two design leadership organizations: [NEXT.cc](#), an eLearning eco-web that introduces what design is and why design is important to our future economies, and [STUDIO 1032](#), a multi-disciplinary design firm working to conceptualize identity, envision engaging landscapes and respond to architectural and environmental challenges.

Linda contributes to sustainable initiatives along the Milwaukee-Chicago corridor, combining an architectural practice with animation and academic publishing for awareness of the complexities and importance of the design of the environment. Keane's socially constructed landscapes are rooted in nature, with artistic, environmental, educational, and entertaining intentions.

## **We would love to know a little bit more about your background and how you define design thinking and user-centered design.**

Well, I'm an architect, an artist, and an academic, and I think of these practices as three overlapping fields. As a professor, I work with students to hone, generate, challenge, and explore ideas. As an artist, I explore new ways of seeing and knowing to inform thinking about design. As an architect, I test new relationships against existing and preferred ones.

Design thinking is the investigation of ideas and relationships with people in places and their shared potential. I think design thinking creates an agile and reflexive mind. It's demanding. It's

looking from every angle possible. It thrives on deep dives. At the same time, it loves simultaneity or confluence of information from diverse fields. Above, below, within, without, it fluidly moves from what is and exists, and what are the social, technological, and economic trends that impact any ability to produce a response, to organize it, make it legal, and to construct it. At the same time, it moves into ideas (some are dreams) only visible in our imagination. In architecture, design thinking has always been about art and science, and obviously with people as users. We study behavioral sciences- how people interact with spaces, objects, environments and each other. We study earth science because we build things on the land as part of larger matter and energy cycles. Today health and well-being are redefined locally and globally. OXFAM calls this [Safe and Just Place for Humanity](#) where society attempts to balance social justice issues with the known planetary boundaries.

Design Thinking continuously evolves a set of research methodologies combining different sciences and seeking critically creative responses. Design thinking expands analysis and builds new knowledge about conditions and contexts in that it responds to social, ecological, environmental, and technological constructs to materialize ideas and implement physical and behavioral change. Design thinking and design research inform design!

As environmental designers, architects absorb and learn how people impact the places where they live and uncover how those places were before people lived there and how they could be positioned to perform better or afford greater opportunities in the future. Even in the early envisioning stage, design ideas aim to produce the best possible outcomes for a place, its people and shared potential for bettering conditions. Fine tuning immediate, short, medium and long-range goals for improvement is what design does.

Empathy training, which a lot of people are talking about, is an inherent skill of architects, because as repeatedly mentioned, design is for people.

We live in a designed world. All around us are objects that people have made somewhere, at some time, for some reason. So it's essential when you think of design thinking and user-centered design to understand that design is by people, with people, for people. Architecture reveals the latent needs and desires of people and places and helps them to participate as engaged citizens.

**Can you tell us more about your design process? I'm curious to learn a little bit about it and how it has evolved over the years and is continuing to evolve.**

Design processes are always about learning. The Who, What, Where, Why, When, and How is where design starts. We engage with people and stimulate relationships and conversations. Asking questions and investigating are design research activities at that are the most socially and culturally intimate because they are about relating to individuals as well as to the public. Every project builds new relationships. From these relationships, we respond by building an expansive team. We first and foremost start with students. And I say we, as I am in partnership with Mark Keane, Professor of Architecture and Head of the Frank Lloyd Wright Initiative at the University of Wisconsin-Milwaukee.

We always have two sets of student teams working with STUDIO1032, our environmental design firm, and NEXT.cc our Elearning educational nonprofit. The teams from the School of the Art Institute of Chicago where I teach, and teams from UW-M where he teaches assist in all phases of projects. When possible, we also add the high school, middle school, and elementary kids as well. From there, we collaborate with additional consultants in fields such as environmentalists, ecologists, hydrologists, horticulturalists, strategic planners, structural engineers, sound and lighting engineers and so on.

Sites of projects are as fertile a beginning ground as are people. A site can be physical, like property. It can be natural or have deep archaeology. Sites can also be analog like our animated films made from individually drawn cells. They can be digital, coded like a website, an app, or some performative new media system.

I teach a studio at the school called Site, and that work parallels our practice and investigation into how students learn about location. It is about finding 'the intelligence' of the situation. Sites seem like they're silent, but they aren't. They are about time and their time's load information. We walk to, along, around, in and out of the place, striding its dimensions into our memory, hearing its voice(s) and connect with it emotionally, as well as physically, and spatially. We study in situ systems and look at all of the connections with the larger earth, air, water, and energy living systems. We make mental maps, cognitive maps, data maps, phasing information from the past to the present conditions to future potentials.

STUDIO 1032's research process involves photographing, filming, documenting, sketching, interviewing a site and its users in person and over time. Using every day observations and inexpensive tools, we gather and analyze data of terrains and layers of occupation. We take air, sound and light levels and make material collections. We look at the density of use or lack thereof. Once satisfied with information of the past, present and potential of the site, the real fun begins. Eventually, we have to get on with the process of imagining what could be there and how it could be initiated and phased!

### **What's your favorite part of the design process and why?**

It varies project to project as we work across media- film, video, web, conceptual envisioning, prototyping, constructing. But that said, my favorite part is the ideation phase or the seeking of the big ideas. I love the projects that move beyond building individual objects as initiations to doing environmental design as connective fabric with participatory advocacy work in urban public space.

### **And how do you kick start or support this?**

Well, at the onset of a project, after we research and review the known and unknown criteria, we brainstorm ideas, giving ourselves sometimes as little as 30 minutes to define our imaginations. We sketch, create storyboards and strategize making quick conceptual models, and then we bring our ideas to the group for discussion and debate.

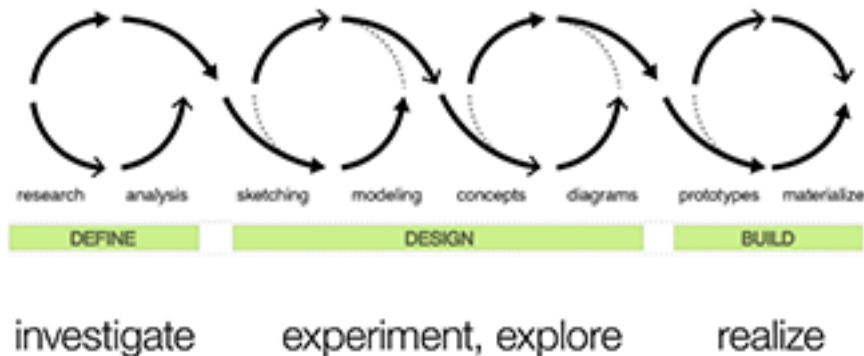
**I want to talk a little bit about sustainability, about the role of sustainability, and how you envision it in architecture for design, now and in the future.**

We are in a tremendous moment of needing to rethink most of the human processes on earth. Organizations are doing great work, but it is only the very beginning of a whole new intelligence about the world. It is not yet systemic, and won't be until it reaches everyone.

As a civilization, we need to learn from each other. We need to be generous when we find something that works better and share it. I think that design education will have a tremendous impact on democratizing access to information, influencing next generations in rethinking and reimagining the ways to interact and relate to each other and the world at large.

**What impact do you think design-based education will have on the future of learning and living?**

Part of our work is to integrate design thinking and making experiences into our public architecture work and K-12 teaching and learning. We feel that this is an absolute essential (and the best) investment for countries all over the world. It is not something that individual companies can control and mediate quickly enough. We need future leaders and young imaginations to be aware of the choices they are making and to act responsibly to improve human interaction on earth. We need to do this by nurturing creativity and innovation in our schools.



*NEXT.cc Define Design Build*

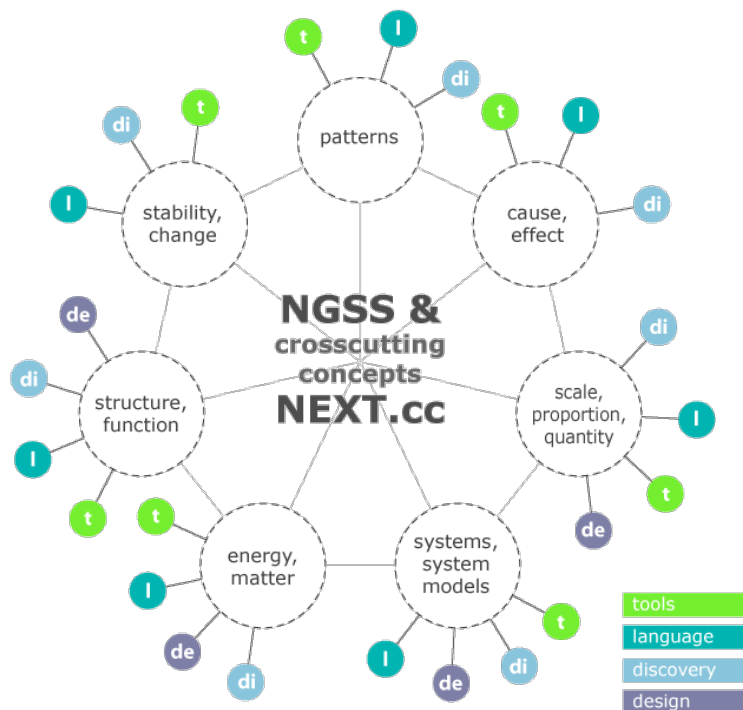
Students become more responsible for their learning and teachers are empowered to innovate in their teaching if they are allowed choice. Freedom implies responsibility. Project learning is happening already in some of the traditional subjects, and maker spaces now offer the possibilities of integrating research and learning from multiple disciplines in schools. So that means art comes out of the art room, math out of math class, and people make things in science labs, health workout rooms, engineering building spaces, culinary kitchens, bike repair stations, urban agriculture plots, and so on! STEAM (science, technology, engineering, environment, art, and math) by Design project-based learning experiences refresh teaching and learning. Herbert A. Simon, pioneer of computer science and artificial intelligence writes that everyone designs who devises courses of action aimed at changing existing situations into preferred ones. Making involves consideration about how, what, and why to make. It nurtures critical thinking, collaboration, and communication- three essentials to practice to work as an entrepreneur. We



are beginning to see efforts to reimagine schools. Our contribution as environmental designers and architects is to support teachers and students as participants in the excitement of ways to learn with digital fluency and eco-literacy accessed via Elearning. The Internet, new media, and new tools for making have completely expanded learning, teaching, making, playing and working. Classrooms now can shift seamlessly between the physical and digital, learning from analog and digital, online and in person, from the real world to what could be real. Learning to learn opportunities have never been so exciting.

Another step for STEAM in project-based schools is to it out onto the school campus and into the school community. Like Architect Richard Saul Wurman’s (Founder of TED) Yellow Pages, children used to spend a lot more time outside, exploring nature and building relationships with the land, sky, and people in their cities. Wurman writes that a classroom without walls is the community with all of its exposures to diverse ways of working. As the Internet opens windows to the world, schools also need to reach out to their communities to cultivate a culture of shared learning. Community connections and place-based exposure develop urban stewardship in future leaders.

Place-Based Project Learning now includes standards-based instruction with the new K12 Next Generation Science Standards integrated crosscutting concepts. The iterative process of design is like that of engineering in that we test something, and we learn from it, and we test it, and we improve it; it mitigates scale and quantity, cause and effect. Trial and error and risk taking with exposure to failure are necessary to experience to develop resilience and perseverance in children. Design education is all about imagining something that doesn’t exist in creating the response to something that needs to be improved. Designing K12 Design Education is the future of learning and teaching.



*NEXT.cc Elearning Journeys linked with NGSS Cross Cutting Concepts 2015 {C}*

**Let's transition into your work. We'd love to hear more about some of your current projects.**

Prairie Crossing is one example of our collaborative, interdisciplinary activism. We call it Architectural Harvest as we worked on it for over ten years. The Prairie Crossing Conservation Community, lead by George and Vicky Ranney, purchased the land at the juncture of farmlands and a landfill. We joined the team of ecologists, conservationists, developers, and real estate agents to envision an environmental conservation community. When we started, Prairie Crossing had already built two sections based on the suburban cul de sac model and was planned to support 2500 homes. Introducing smart growth guidelines and transit-oriented development brought phases three to five into closer relationship to the land with 350 acres protected and with a denser walkable community of 350 homes.



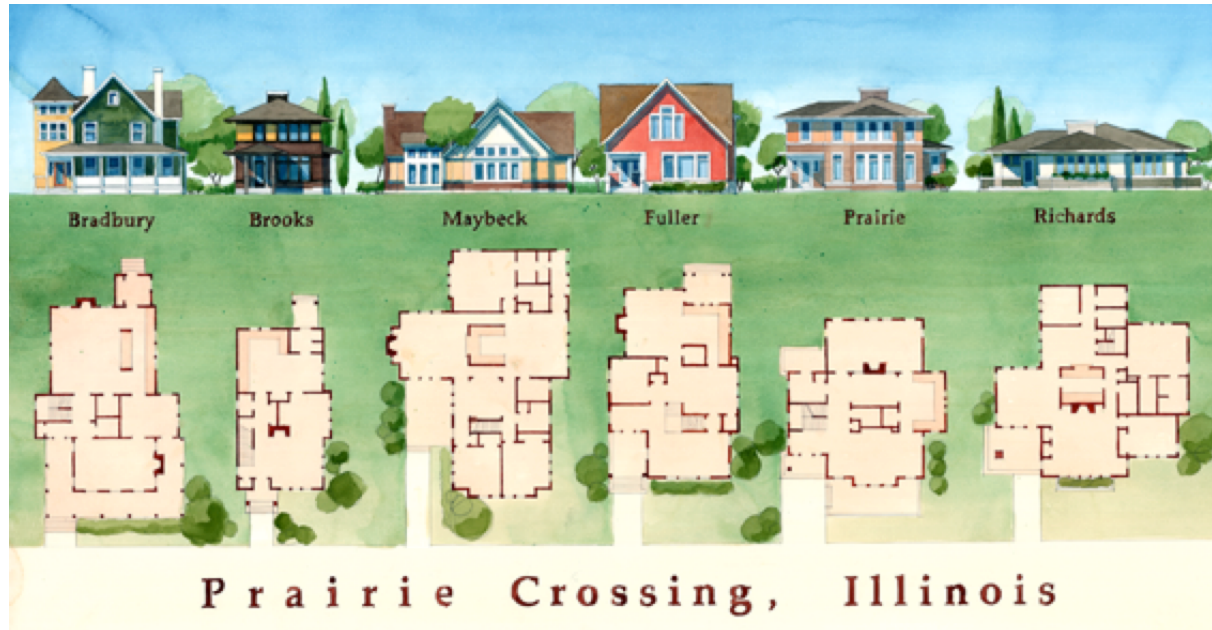
*Homesites on walkable blocks set amidst a restored Prairie photo STUDIO 1032*

Adding a mixed-use core with a small grocery store, hardware outlet, bakery, coffee shop, branch library, etc. created another destination in the community with a lake, beach, prairie trails, working farm, farmers market and stable. A new charter school to serve the 350 homes created a focus on environmental education for the community adjacent to the Byron Colby Barn.

If we just subdivide countryside into lots for homes and build homes, we're not building the infrastructure or ability for community life. This pre-LEED project conserves its land in a lake, beach, and restored prairie. Native vegetation filters the water and restores the original landscape with living habitats enjoyed by everyone.

We organized a workshop of thirty local architects to understand, explore housing styles and stock, and generate regional prototypes responsive to contemporary lifestyles. We wrote the design guidelines for the construction of the homes with Skidmore, Owings, and Merrill, Chicago. All of the architects submitted designs vetted by real estate agents, developers, construction firms, and prospective homeowners. Five of our typologies of the 30 different housing types chosen to be built in several iterations. Last summer Prairie Crossing celebrated its twentieth year. It was very fulfilling to revisit and give tours with the owners of the homes we had designed. People move to Prairie Crossing to embrace life in an environmentally active community that promotes life-long learning and best energy saving practices.

Design mediates desires of those involved in the building process and everyone who uses it and lives in it. The houses, all built pre-LEED, have 50% Build America energy savings. They're very beautiful in a timeless way, and our concentration on bringing contemporary lifestyles into a regional vernacular make them highly desirable and livable.



*STUDIO 1032 typologies of Speculative Build America Homes for PC, IL*

The Bradbury, the Brooks, the Prairie, the Fuller are smaller homes than the American standard. We wanted the experience of the home and the landscape to be such that everywhere you walk inside, your reference is always out to the distant horizon of the everchanging lighting and flora and fauna of the prairie. Living in these homes offers repeated connection to your place in the community. With such long views, spaces can be more efficient and still feel the presence of 'refuge and prospect.'

We worked with Prairie Crossing Conservancy for over a decade on a variety of tasks. We helped them renovate existing buildings. We oversaw construction documentation for the new houses. We conceptualized initial proposals for the station village and the transit village and referred them to SOM's planning department when we returned to teaching. Prairie Crossing is the only place outside of Chicago that has a train line to the Loop and a train line to O'Hare. It is a transit-oriented development.



City of Chicago Green Roof WebSite Keane, Westerlund, Dept. of Environment  
 STUDIO 1032 consults on green initiatives between Milwaukee and Chicago. In Chicago, I directed the design of the City of Chicago Green Roof Website introducing the aesthetics of sustainability in a user-friendly, appealing website that now has hundreds of green roof postings.





*STUDIO 1032 Greening Goose Island for Burnham 100 Big Visions Exhibition*

For several years, teaching graduate architecture studios with visiting practitioners, Smith/Gil and Landon Bone Baker, we re-envisioned Goose Island as new lungs and food production for the city set within mixed use, mixed income housing. Greening Goose Island weaves urban fabric with needed open space over the freeways and along the riverbanks re naturing Chicago's 'Urbs in Hortis' or city in a park. Our Elearning eco web with a green roof, green schools, green building place making activities lists as one of eleven Burnham 100 Educator Resource Guides for using Chicago as a K12 Learning Lab and connecting community experiences with built environment proposals.



GreenWorks MKE shows our different areas of attention. From the northeast side plan to the university, progressive ideas push a fresh water agenda with research centers for the Great Lakes, to restored riverine walks and trails in the Menomonee Valley and north along the Milwaukee River in the middle, introducing smart growth guidelines. Our work over ten years as part of multidisciplinary teams on the Milwaukee River area helped conceive of a greenway corridor overlay district and established riverine development standards, preserved viewsheds, improved multifunctional trails and enhanced wildlife habitation. Once you're on the river, it's almost like being in Central Park. You can't believe you're in a city—you can kayak surrounded completely by nature. It's beautiful.

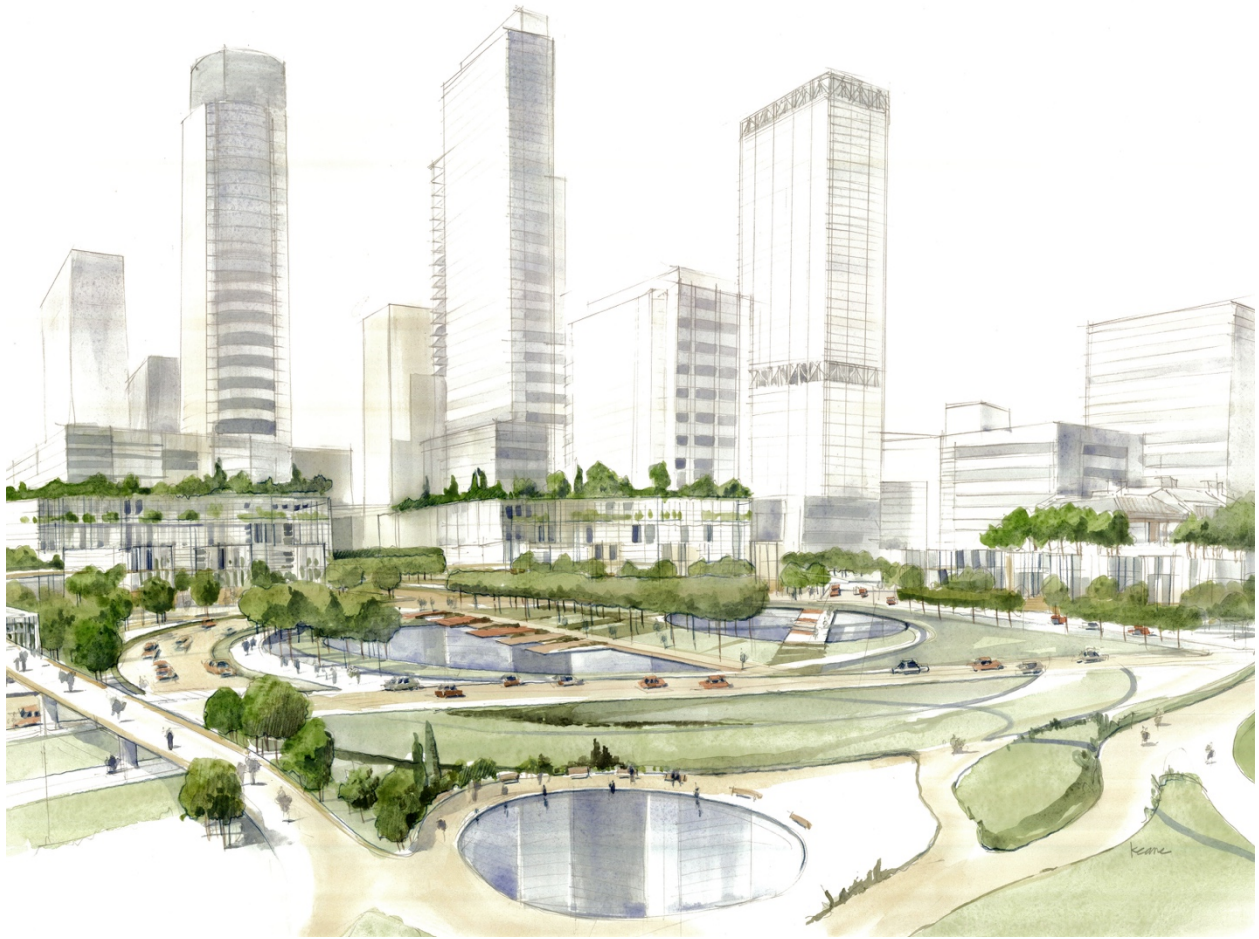




*STUDIO 1032 Green Works Milwaukee Terrains of Envisioning Change*

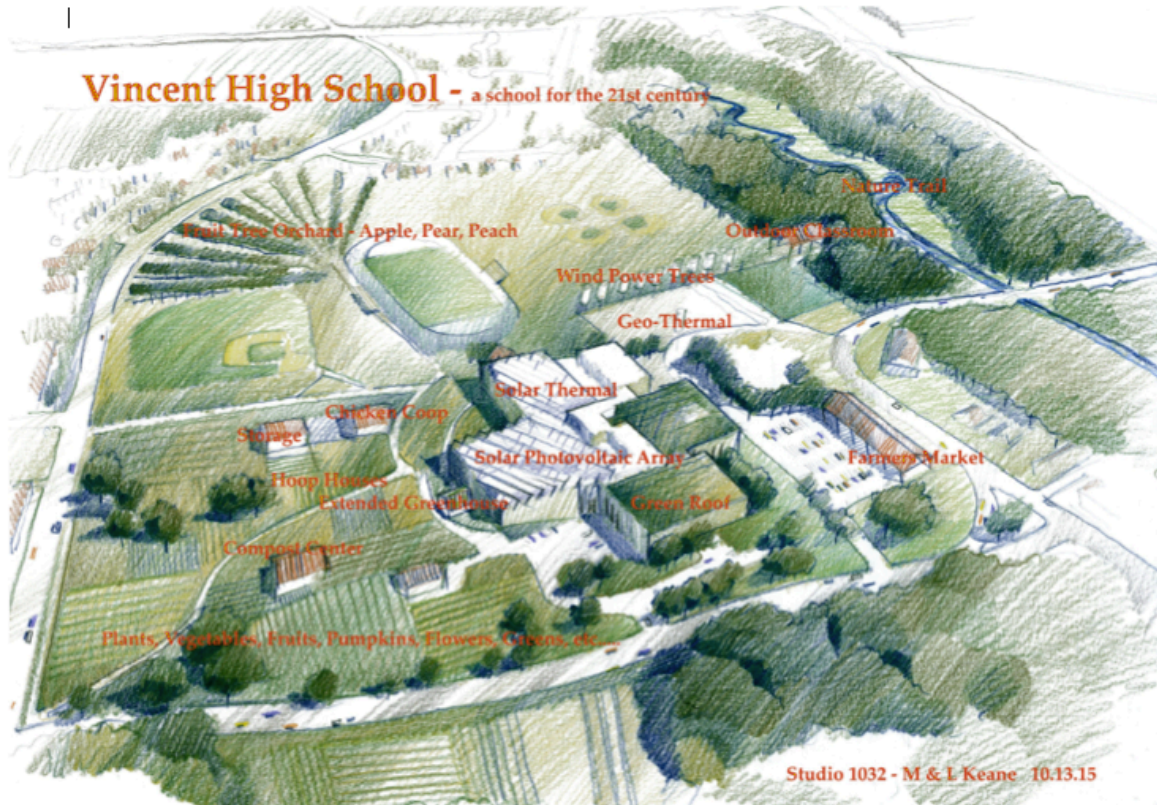
The work in the middle of the map was a three-year project trying to stoke the imagination of the city of Milwaukee to develop a waterfront public space promoting the Great Lakes Water industries as an environmental education public park. All the roads entering Milwaukee come to the lakefront at this point. A water filtering roundabout slows traffic allows for multiple pedestrian crossings to multi-generational activities and includes environmental demonstrations wetlands, habitats, fisheries, and boating ponds. Architectural development is tiered and stepped back from the lakefront allowing for multiple public areas, open viewsheds of the art, culture and science at the lakefront, and a full day of sunshine on the beaches. A second-floor bike and public promenade encircle the site, so pedestrians move freely above the car traffic.





*STUDIO 1032 Milwaukee Lakefront Gateway Study*

These last projects just came into our office recently, and we're excited to be supporting schools in envisioning new teaching methods and learning environments. The Milwaukee public school system is looking at integrating environmental education in their schools. This first one happens to be Vincent High School, which has a lot of property. They're looking at transforming some of their lands into teaching centers for geothermal applications, urban agriculture demonstrations, and water testing in the creek at the top of the site. We are excited to be starting this project.



Vincent High School Milwaukee with Reinvigorated Sustainable Practices STUDIO 1032  
 The second is Morse-Marshall High School, formerly a blue ribbon high school for 3500 students now a struggling high school of 900. The campus is massive with available space but yearns for new ways of teaching. Currently, the school is envisioning the introduction of nine different types of maker spaces to ignite the imagination of teachers, students, and families.

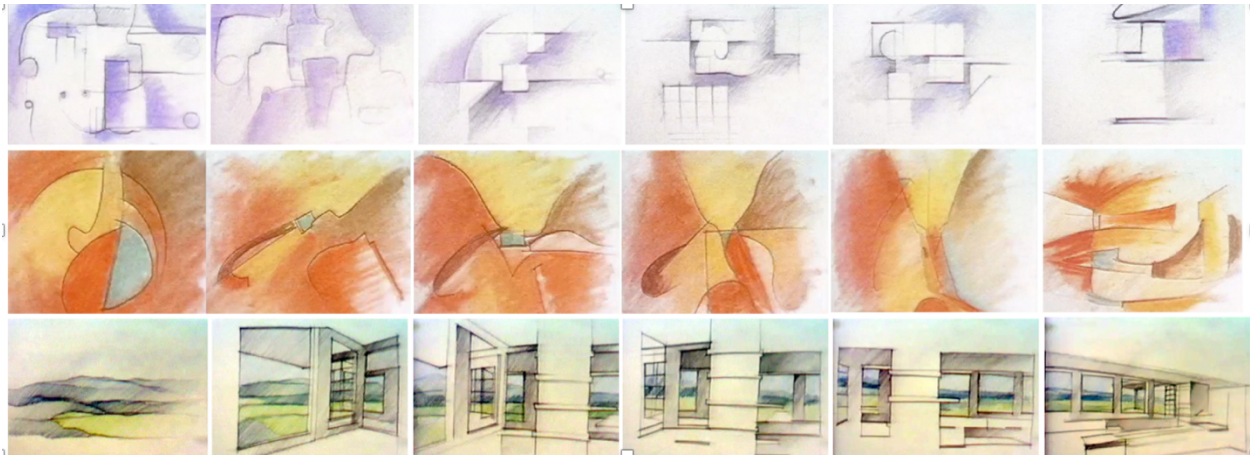
*Morse-Marshall Makerspace High School Campus Plan STUDIO 1032*

**Are you seeing more business or interest coming from non-profit sectors?**

Yes, we've been working with them for 20 years, and we see them as some of the strongest advocates for innovation. Milwaukee is generating creative clusters. The National Government Association published a report, Art, Design, and Culture: Five Engines for the Future and Milwaukee received an NEA grant to cultivate its creative industries.

As higher education professors and parents, we realize that design education is not engaged in K-12 and that the two-thirds of the population who do not enter college are design denied. We work to share methodologies in teaching, learning and research as our practice finding ways to support students denied art instruction and introduce teachers to design pedagogy through community engagement.





*From PBS Image Union Retrospective of Mark and Linda Keane Animated Architecture {C}*  
Early on, we created films about architecture shown on PBS Chicago to engage the public in the design of the built environment. As technology progressed, we created a CD and short text, ARCHITECTURE AN Interactive INTRODUCTION, which combined narrative, film clips, video, overlay diagrams, hyperlinked subjects and appendixes of information pre-internet.

Once the World Wide Web became available, we created an Elearning Designopedia, NEXT.cc. NEXT.cc is a collaborative effort by principals, teachers, architects, artists, and college art, art education, design and architecture students to connect place-based opportunities for young imaginations to explore their school campuses and community while. We research and create trans-disciplinary journeys that engage local ideas with global practices. Students and interested citizens of many ages explore these activities at home, in the classroom, on the school campus, and out in the community with links to virtual field trips and museum interactives all topically connected with contemporary art, science, environment and design practices. Think of it as an open source network, kind of the Internet of Things Designed for K-12. Think of it as an online Designopedia that offers endless portals to the world of experience and learning. The iterative, experimental, explorative nature of design needs to be part of every young person's schooling to allow for failure, reflection, evaluation, and rethinking. NEXT.cc is an outstanding example of a social network that locally and globally introduces and supports systemic change in teaching and learning.

**NEXT**.cc

architecture  
indoor and outdoor living spaces, buildings and groupings of buildings, connected with natural living and non living systems

art & design  
architecture  
language arts  
engineering  
environment  
eco literacy

health & p.e.  
math  
science  
social studies  
technology  
digital fluency

normal gallery about next design workshops people press connect contribute twitter facebook

tools	language	discovery	design
2d geometry	air	3d geometry	adobe
21st century classroom	7 natural wonders	animation	architecture
alphabet	color	animals	area
acoustics	air quality	architecture and fashion	bridge design
design thinking	diagramming	art nouveau	artificial light
architectonics	bauhaus	business card	cartoons
ABC	diagramming	art nouveau	artificial light
architectonics	bauhaus	business card	cartoons

*NEXT.cc Landing Page to Explore Integrated STEAM Scales & Subjects Activities*

We've gotten a lot of support to partner to disseminate building blocks for exploring design. The best part, though, has been working with teachers and students in testing design activities. People of all ages are eager to learn in new ways and to access 24/7 sources to develop project-based activities. The TOOLS, LANGUAGES, DISCOVERY AND DESIGN journeys aligned with K-12 Next Generation Science Standards, Art, and Design standards, and North American Association for Environmental Education Standards help teachers integrate subjects and scales, to challenge their traditional instruction methods. Students just dive in and start exploring!

**Before we close, I'm wondering what advice you would give to young designers.**

I would say listen and look and learn every day. Find everybody and everything that interests you, and enjoy life, really, in a big way. My younger self that talks to me daily; that inner voice that keeps saying, What if? Can you imagine? Where do you want to explore next? What adventures are ahead? Can it be better? Can it be more beautiful? Can you make it more helpful?" I would encourage people to be in awe of the potential with each other and the world that exists right from where they are. Just keep learning, keep exploring, and follow your interests. Interests will become passions and living your passions is living a dream. It has been an intellectual gift to be a professor at The School of Art Institute, to have a family and learn a new skill, to work with a

partner and students as a designer, and to learn from and with so many different communities how to collaborate to improve life.

Life has been and continues to be, absolutely, incredibly amazing.

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