

Parks & Recreation

INNOVATION GUIDE 2023
NRPA.ORG



THE OFFICIAL PUBLICATION OF THE NATIONAL RECREATION AND PARK ASSOCIATION

2023 INNOVATION GUIDE

Using Tech to
Create Smart
Parks



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of Innovation

2023 Innovation
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Play Connects Us

The beauty of play is that it's not just play at all. It offers opportunities for interaction and imagination, coordination and cooperation, freedom and fun. Play allows children to learn about others, develop leadership skills and, most importantly, make connections. That's why Landscape Structures, Inc., a Delano, Minnesota-based commercial playground equipment manufacturer, is committed to designing and manufacturing playgrounds that offer loads of play value for children of all abilities and also are beautifully designed to fit the environment.

This commitment to design began more than 50 years ago. As aesthetics gained prestige in the world at large — in everything from personal products to home design — Landscape Structures reinforced its design efforts to create unique, one-of-a-kind custom playgrounds. The company began designing themed playgrounds that reflected the history and diversity of their communities, as well as playgrounds that integrate into the surrounding environment. Today, in addition to traditional playgrounds, Landscape Structures collaborates with communities to create iconic destination playgrounds that offer both play value and curb appeal.

What's more, Landscape Structures' commitment to product innovation always has correlated with providing great play experiences for kids. Forma™, the company's latest creation, brings a contemporary vibe to any play environment. With its architectural influences, endless color possibilities and open sightlines, Forma creates the perfect complement to any play setting. Plus, kids love the dynamic, challenging and inclusive play opportunities provided by Forma's clean, angular design and sensory-rich mix of materials.

Landscape Structures Founder Steve King served as a member of the Federal Board's Recreation Access Advisory Committee after the passage of the Americans with Disabilities Act (ADA) back in 1993. Since then, the company has solidified its commitment to go beyond ADA



and continue to find new ways to make playgrounds better for kids of all abilities. From being the first manufacturer to design for sensory processing disorders to breaking barriers with the We-Go-Swing™, the first no-transfer inclusive swing that can be integrated directly into the playground setting, to designing play spaces for kids who are blind or have low vision, the company's design philosophy centers on finding ways to ensure all kids can naturally play side by side.

The team at Landscape Structures knows that children and their families' lives are built around the connections made through play. They see it every day, everywhere. Connect with your local Landscape Structures playground consultant to create playground designs that are not only aesthetically pleasing to the eye, but also encourage children of all ages, abilities and backgrounds to make connections that last a lifetime. Learn more about Landscape Structures' commitment to connecting people through play by watching our newest video, *Play Connects Us*, at playlsi.com/ShapedByPlay.


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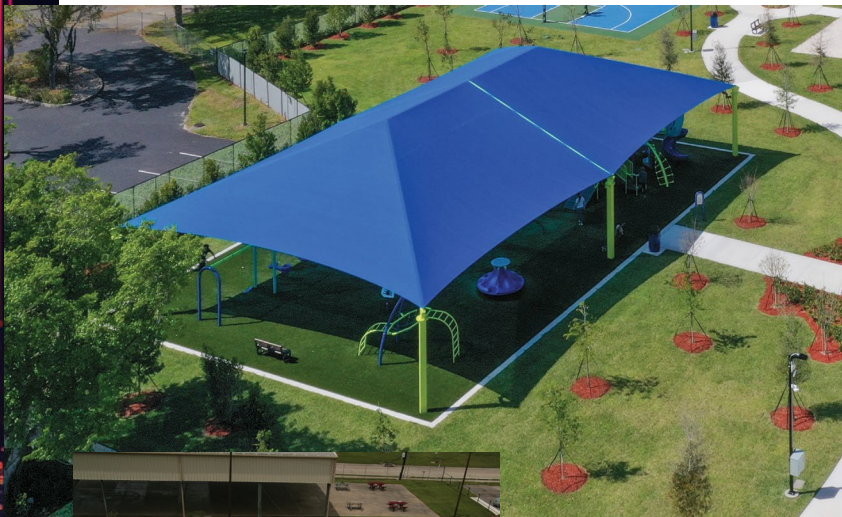
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The Greenfields X-Treme Ninja Courses put a fun twist on fitness – perfect for motivating older kids and young adults to get active in parks. Picture it in your space – contact us for a complimentary design, and ask us about our grant opportunities!

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attention to detail ensures complete quality control and American manufacturing efficiency.

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New technology is enabling park managers to effectively use parks as active assets to help control local microclimates and mitigate the urban heat island effect.



SMART PARKS

Powering Sydney, Australia's green spaces

By Peter Knight

As Australia heats up and El Niño approaches, it is a good time to consider the role of urban green spaces. Parks provide quiet retreats for people in busy cities, supporting community members' health and wellness, but they also support conservation, resilience and climate-readiness. New technology is enabling park managers to effectively use parks as active assets to help control local microclimates and mitigate the urban heat island effect.

Smart Irrigation

In Sydney, the capital of the state of New South Wales (NSW), a collaboration between local government, academic institutions and industry is proving this concept. Sydney's Olympic Park, a 42-hectare (104-acre) site in the metropolis' Central River District, is the location of the Smart Irrigation Management for Parks and Cool Towns (SIMPACT), which integrates a network of environmental sensors with weather station data and machine learning. Its goal is not only to conserve water and other resources, but also to optimize the park cooling island effect through managed irrigation on the surrounding urban area.

Sebastian Pfautsch, Ph.D., associate professor of urban studies at Western Sydney University,

is the project lead. He notes that the park cooling island effect on the surrounding urban residential area varies throughout the day due to the lower thermal mass of the park area versus the higher mass of surrounding concrete and asphalt. In the night, this difference can be as much as 7.5 degrees Celsius, and smart irrigation is used to reach at least 3 degrees Celsius during warm summer days.

SIMPACT has embedded more than 50 above-ground sensors, as well as 200 below-ground sensors, in Olympic Park, which are connected using a long-range wide area network (LoRaWAN). In addition to this network, the project also uses 13 weather stations that record additional important environmental information, like

Dr. Sebastian Pfausch presents the data showing differences within the Olympic Park area shown on the “Park Now” application.

rainfall and wind speed. All data is then analyzed by an artificial intelligence (AI) engine that reviews historical and current predictions against park management and how these results match with target soil moisture levels in each of the 200 individual irrigation zones. This process assists park management with saving water and mitigating summer heat.

SIMPACT’s sensors monitor a broad range of parameters, including soil moisture, relative humidity, wind direction, wind speed, precipitation and other information that is uploaded in real time to an Olympic Park Digital Twin, which then runs many iterations to calculate the most efficient irrigation method to optimize evapotranspiration (the release of moisture through leaves).

A tall tree with a large crown can transpire 300 to 600 liters (79 to 159 gallons) of water on a summer day, which provides effective cooling, in addition to its shading effect. Apart

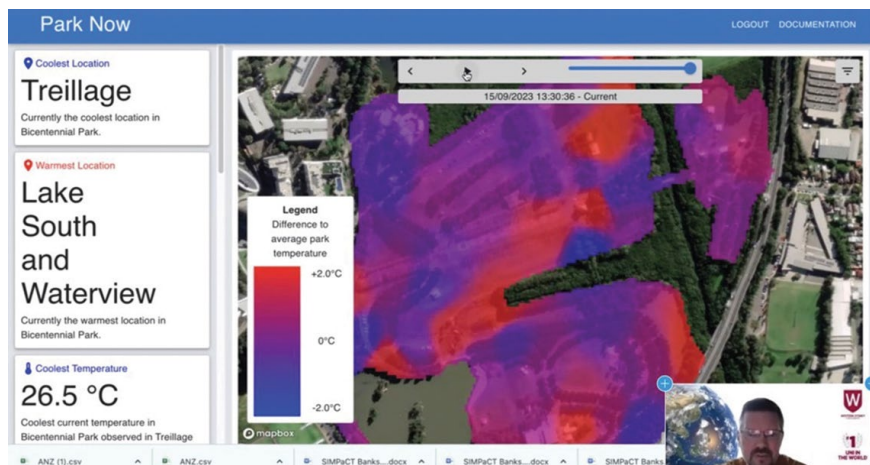


PHOTO COURTESY OF SIMPaCT

from trees, grass, shrubs and other forms of vegetation also transpire water.

SIMPACT’s analysis is also available to park users on SIMPaCT’s “Park Now” application, which allows people to identify where in the park is best to play, exercise or walk their dog. As Pfausch notes, during the coronavirus (COVID-19) pandemic, “parks were a critical refuge where people could get out of their homes to decompress during quarantine” — emphasizing their role in providing relief from not only urban heat, but also psychological stress.

For park managers, SIMPaCT provides quantitative monitoring that shows the impact of irrigation on parameters — such as soil moisture, plant health and air temperature — and provides suggested irrigation adjustments that are uploaded to the irrigation system each night.

SIMPACT has been designed with scalability in mind. Funded by the Smart Places Acceleration program of the NSW Government and Sydney Water, supported by Sydney Olympic Park Authority — the agency responsible for Olympic Park — SIMPaCT is a park management solution that can be further used to remotely operate smart irrigation systems in other urban green spaces of different sizes locally, nationally and internationally.

SIMPACT also is interested in resource conservation, especially in water-sensitive Sydney. The municipal utility, Sydney Water, is a project partner and aims to reduce water use by 15 percent in two years. But, unlike other commercial solutions, its main focus is using urban green space to optimize thermal conditions. The project already has won the 2023 IoT [Inter-



PHOTO COURTESY OF SMART IRRIGATION MANAGEMENT FOR PARKS AND COOL TOWNS (SIMPACT)

net of Things] Australia Awards for Research and the IoT for Good award.

Green IoT

As the northern hemisphere just survived the hottest summer ever recorded, with average temperatures 2.5 degrees Celsius above historical highs, the ability of cities to find solutions to the effects of climate change is increasingly important.

However, industry and academics are not just looking at the potential for urban green spaces to manage outdoor temperatures. In another project in Sydney, the University of Technology Sydney (UTS) Sensor Lab, and the Australian branch of Japanese teletech company, NTT Limited, also have teamed up to develop a Green IoT solution for green walls.

As with parks, green walls are often seen as an attractive, although expensive, feature for modern buildings. However, as the Australian government tightens up monitoring of construction-related emissions standards, the role of green walls in actively mitigating both internal thermal conditions and offices' embodied and operational emissions is

Sydney's Olympic Park is the site of SIMPaCT, which integrates a network of environmental sensors with weather station data and machine learning.



PHOTO COURTESY OF SIMPaCT

The sensor network on the green wall at the University of Technology Sydney Broadway campus monitors soil moisture and nutrition.

of growing interest to developers.

As parks provided a space for people to “decompress” during COVID-19, building owners are keen to create internal green spaces to foster a sense of relaxation and community within their new commercial buildings in a post-pandemic world.

At the UTS Broadway campus, the two partners have set up a proof-of-concept green wall with 18 sensors embedded that monitor a 30-foot-high space. These sensors gather data on soil moisture and nutrition based on electrical conductivity of salt concentration and alkaline levels. This data can then be connected to machine learning integrated with the Building Management System to optimize the management of the green wall to reduce traditional maintenance and thermal controls, such as air conditioning, as well as their associated emissions.

The team's goal is also to take the green wall data into reporting formats for property managers, required under the National Australian Built Environment Rating System, that measure actual building performance against construction benchmarks.

The team at UTS Sensor Lab also aims to enhance the parameters its



PHOTO COURTESY OF NTT LIMITED AND UNIVERSITY OF TECHNOLOGY SYDNEY RADIO FREQUENCY AND COMMUNICATION TECHNOLOGIES

sensors can monitor to include a broader range of parameters, such as potassium levels and carbon absorption by green walls. They also are working with advanced forms of networking technologies that require less power from their environmental monitors and can extend the life of embedded sensors by years.

The social and psychological benefits of urban green spaces have been well-understood for many years. However, as a new generation of sensors and networks develops and is integrated into AI modeling, the ability to use these green spaces to actively manage microclimates, both inside cities and buildings, is becoming a viable solution.

As the great management guru Peter Drucker once said, “What gets measured gets managed.” But as SIMPaCT and the Green IoT projects are showing, measurement and analysis are what can enable management — allowing parks and green walls to become active assets in solving the climate challenges that cities face.

Hopefully, these solutions come in time for what promises to be a series of long, hot summers! 🌿

Peter Knight is Managing Director at Real Assets Advisory & Finance (peter.knight@realassetsaf.com).

Creating a Culture of Innovation in Your Agency

By Maureen McCarthy

Innovation comprises one of the core values that guide the Park District of Oak Park in Illinois. That is, we strive to continuously try new methods and ideas, adapt services according to trends, and continually improve processes. Periodically, we review our actions and accomplishments across each value, looking for ways to be better. In our review, we asked our community if they view the park district as innovative. To the surprise of many, our community members did not. Following an internal review, we learned that some staff viewed themselves as innovative, but the agency lacked a mechanism or process that encouraged staff to be innovative. These findings presented a huge opportunity for the agency. We needed to expand our innovation efforts. We needed to create a culture of innovative thinking that permeated the entire agency, from seasonal staff through leadership. And we needed to develop a process to do so.

A Team Effort

Our first step was to assemble an innovation team charged with developing a process to gather and implement ideas. The team comprised of members across departments — some with experience and others with none. The team began by exploring how staff viewed innovation. Through interviews and discussions, most staff considered innovation to encompass the next big idea, like the iPhone. While big ideas are vital to innovation, the team knew that small ideas grow and develop too. With these learnings in hand, the innovation team focused on developing a

process that would garner ideas both big and small that would make our processes easier and make our parks, programs and services better.

Next, the innovation team needed to develop a mechanism or process to gather ideas. It was important for the program to be easy to access and use. The team identified a simple web-based program that was user friendly and easily accessible to every employee in the agency. The program allows staff to post their ideas and others to add, comment or vote on ideas. This helps the ideas grow and develop organically. We themed the program “Launch Pad” to illustrate the idea of

getting good ideas off the ground and into our everyday work. At the start, the agency dedicated \$10,000 from nonresident fees to fund some of the ideas. While not crucial, we do believe it motivated staff to participate.

Encouraging Innovation

The next hurdle for the innovation committee was to identify ways to engage all staff, not just those who had the means to make things happen. Staff engagement, especially among part-time staff, was a challenge. To encourage submissions from all — no matter how big or small — we rolled out a series of awards. Staff members who post an idea that is launched receive a moon-man statue. Staff members who perform the work to launch the idea receive a small star statue. Staff who submit the largest number of comments on ideas receive a Moon-Pie. Finally, we launched the Stinky Award to help staff feel comfortable posting ideas that might not be a home run. This award, along with a trophy, is presented to the person with the idea we tried but that did not succeed. This demonstrates the agency’s willingness to take calculated risks; not all ideas we launch will be successful and we learn from these experiences. Awards are presented to staff at each quarterly in-person all-staff meeting to further encourage engagement.

The innovation team is responsible for reviewing all the ideas submitted.



PHOTO COURTESY OF MAUREEN MCCARTHY, PARK DISTRICT OF OAK PARK (ILLINOIS)

To encourage all staff to submit innovative ideas, the innovation team launched a series of awards.

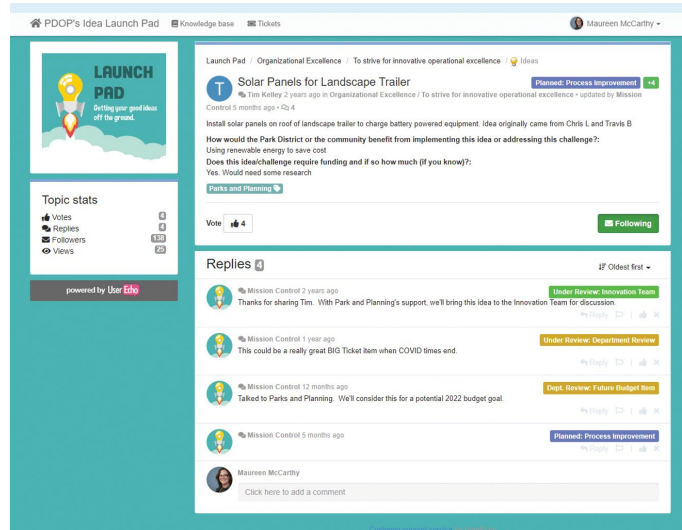
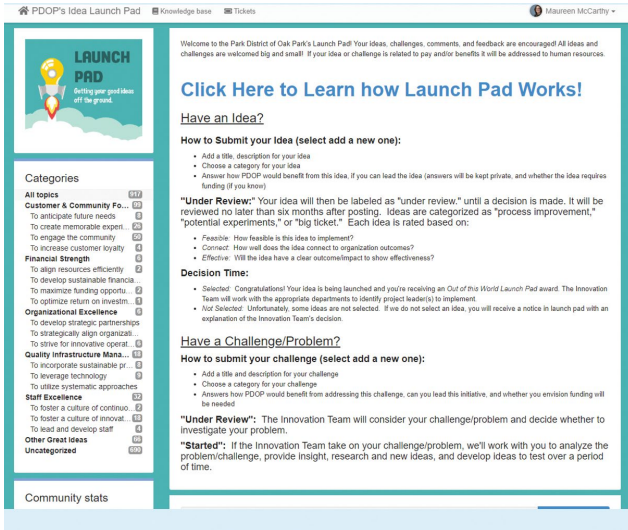


IMAGE COURTESY OF MAUREEN MCCARTHY, PARK DISTRICT OF OAK PARK

If any idea has merit, the committee chairperson shares the idea with the department head to see if it can be implemented. If the idea needs funding, the innovation team can approve the funds from the seed money, or the department can absorb the cost in its budgets. More expensive ideas may need to be put on hold until they fit into a capital plan or a budget process. Sometimes, ideas do not fit the agency's needs, have been done or tried before, or simply are not feasible. The innovation team communicates with every idea poster to let them know where their idea is in the process, including those that we will not pursue.

Launching Ideas

One of the first ideas we launched was intended to save our landscape staff time. The idea was to install a large industrial gasoline can on landscape trucks, allowing staff to maximize their time in the field by avoiding time-consuming trips to the gas station when equipment needed refilling. It was a simple idea that saved staff valuable time.

A few years into the program, we added a "Big Idea" contest for those viable ideas with a price tag greater than \$1,000 that could be funded by the executive director. The staff who posted these ideas worked with the

marketing team to create short videos sharing with the rest of the agency why the park district should launch their idea. The videos were shared with all staff who then voted on their favorite. The agency funded the idea with the most votes. One of the first "Big Ideas" we implemented was submitted by a parks and planning staff member who wanted to replace our gas-powered leaf blowers with electric ones to be environmentally conscious and ensure the safety of users. Interestingly, we noticed a remarkable increase in participation from our parks and planning staff that we attribute to launching an idea from that department.

Changing Strategies

The program continues to evolve, and we tap the innovation team for ideas in a variety of areas. One year, we tied ideas to the agency's strategic initiatives. This helped educate staff on the agency's strategic initiatives and generated fresh ideas to meet those initiatives. In another instance, the innovation team helped the agency solve a problem brought to us from a hiring manager. The agency was struggling to attract qualified early childhood programmers. The innovation team conducted interviews with staff to understand and explore why they chose to work for us. They also interviewed

The innovation team used a simple web-based program to gather ideas from all staff members.

early childhood professionals to learn what attracts them to jobs in the field. Ultimately, the team identified alternative marketing messages that focused directly on employees' wants and needs rather than agency benefits.

The success of this program relies heavily on the staff who are responsible for the process. Regardless of who runs the program, the key to success comes from the passion and desire of staff to champion idea generation and for continuous improvement. The most successful team members have been those who were excited about innovation and ideas. Finding the right people to serve on the team is key to long-term success.

We are now about seven years into the program. Our community, as well as our staff, now use words like "innovative" and "forward-thinking" to describe the Park District of Oak Park. Our staff now shares ideas to help us improve and grow. Many ideas are launched outside of the innovation platform, meaning innovation has become part of our everyday work. 🌱

Maureen McCarthy is Superintendent of Recreation at the Park District of Oak Park (maureen.mccarthy@pdop.org).

Innovation in Parks and Recreation

This year's award-winning projects and programs

Each year, the NRPA Innovation Awards recognize and honor the park and recreation professionals, and their agencies, who are making the latest advancements in the field of parks and recreation. The 2023 Innovation Award winners highlighted below exemplify the inspiring work park and recreation professionals are doing in their communities.



Congratulations to City of Greenville (South Carolina) Parks, Recreation and Tourism for winning the overall 2023 Best in Innovation Award for its project, Unity Park!

PHOTO COURTESY OF COLUMBUS RECREATION AND PARKS DEPARTMENT



Cap City Nights is held in Columbus, Ohio.

Innovation in Health

Reducing Violence in Columbus, VOICE – Columbus Recreation and Parks Department, Columbus, Ohio

Violence, Outreach, Intervention, Community Engagement (VOICE) ends the cycle of violence through intense case management to ensure victims of crime receive the necessary support to prevent re-injury and/or jail time and can recover. A partnership between Columbus Recreation and Parks and Columbus Public Health, this hospital-based intervention mobilizes a team of interventionists and social workers to help participants identify goals, create a life plan and develop self-reliance. It includes connections to resources and incentives to ensure success. Support focuses on many aspects of recovery and stabilization, including employment, workforce development, housing, life skills and compliance with follow-up medical care.

Innovation in Equity

SootheSpace – Fox Valley Special Recreation Association, Aurora, Illinois

SootheSpace is creating safe sensory spaces everywhere! Attending community events can be overwhelming — especially for people with disabilities. Imagine navigating the noisy surroundings of a local outdoor festival or special event without having access to a space that promotes sensory regulation. SootheSpace is a portable sensory room where light, textures and interactive equipment are designed to create an ideal atmosphere to recenter and escape from a sensory-rich environment. Together, we are making the community more inclusive so people of all abilities can maximize their enjoyment and attendance at community events without getting overwhelmed or having to leave early.

PHOTO COURTESY OF FOX VALLEY SPECIAL RECREATION ASSOCIATION



SootheSpace is a portable sensory room where light, textures and interactive equipment are designed to create an ideal atmosphere to recenter and escape from a sensory-rich environment.



Innovation in Conservation
Meadowdale Beach Park and Estuary Restoration Project – Snohomish County Parks and Recreation, Snohomish, Washington

A railroad embankment built in the 1800s separated many historic estuaries and creeks from area beaches and Puget Sound. This marks the first Puget Sound restoration project and is an initial step toward strategic restoration of the entire railroad embankment. To restore the connection, 130 feet of the embankment and an undersized culvert were removed and replaced with a railroad bridge. An accessible walkway was built under the bridge for visitors’ safe passage to the beach. The restored estuary serves as sustainable rearing habitat for juvenile salmon, crucial for the Puget Sound food web and endangered Southern Resident orcas.

The restored estuary serves as sustainable rearing habitat for juvenile salmon, crucial for the Puget Sound food web and endangered Southern Resident orcas.

Innovation in Park Design
Unity Park – City of Greenville Parks, Recreation and Tourism, Greenville, South Carolina

Unity Park, located in the City of Greenville, was designed to protect the Reedy River, establish new public connections and create more open space to balance the city’s growth. The 60-acre, \$66 million park contains eight acres of wetlands, a 10,000-square-foot welcome center, three state-of-the-art playgrounds, a 4,100-square-foot splash pad, basketball courts, 12 acres of green space, a network of walking trails totaling 2.5 miles and three pedestrian bridges. Park planning also included the creation of affordable workforce and senior housing on eight acres of land, as well as joined what was historically two separate parks — one for Black patrons and one for white patrons.



PHOTO COURTESY OF CITY OF GREENVILLE PARKS, RECREATION AND TOURISM

Unity Park was designed to protect the Reedy River, establish new public connections and create more open space to balance Greenville, South Carolina’s growth.

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