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THE MAGAZINE OF
THE HEINZ ENDOWMENTS

Issue 1 2017

INSIDE ALMONO: THE STORY OF HOW A FORMER PITTSBURGH STEEL MILL BECOMES A MODEL OF A SUSTAINABLE COMMUNITY

ISSUE 1 2017

INSIDE h

2 FEATURE: NEXT STAGE

The beginning of a new year is a good time to take stock of where you're going and where you've been. And the development of a former steel mill site called Almono into a sustainable community is a transformation story that's still being told.

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The Heinz Endowments was formed from the Howard Heinz Endowment, established in 1941, and the Vira I. Heinz Endowment, established in 1986. It is the product of a deep family commitment to community and the common good that began with H.J. Heinz, and that continues to this day.

The Endowments is based in Pittsburgh, where we use our region as a laboratory for the development of solutions to challenges that are national in scope. Although the majority of our giving is concentrated within southwestern Pennsylvania, we work wherever necessary, including statewide and nationally, to fulfill our mission.

That mission is to help our region thrive as a whole community — economically, ecologically, educationally and culturally — while advancing the state of knowledge and practice in the fields in which we work. Our fields of emphasis include philanthropy in general and the disciplines represented by our five grantmaking programs: Arts & Culture; Children, Youth & Families; Community & Economic Development; Education; and Environment.

In life, Howard Heinz and Vira I. Heinz set high expectations for their philanthropy. Today, the Endowments is committed to doing the same. Our charge is to be diligent, thoughtful and creative in continually working to set new standards of philanthropic excellence. Recognizing that none of our work would be possible without a sound financial base, we also are committed to preserving and enhancing the Endowments' assets through prudent investment management.

h magazine is a publication of The Heinz Endowments. At the Endowments, we are committed to promoting learning in philanthropy and in the specific fields represented by our grantmaking programs. As an expression of that commitment, this publication is intended to share information about significant lessons and insights we are deriving from our work.

Editorial team Linda Braund, John Ellis, Donna Evans Sebastian, Carmen Lee, Grant Oliphant, Courtney Tolmer. Design: Landesberg Design

About the cover The cavernous Mill 19 building is at the heart of the redevelopment of the former Pittsburgh steel mill site called Almono. The structure is large enough to construct an energy-efficient building within its shell that will house offices, research space and light manufacturing—all while preserving a remnant of the region's steel industry heritage.

Corrections The printed editions of our last issue incorrectly identified the woman on the magazine cover and the mother of the baby pictured in the "Head Start" story. The woman on the cover is Essence Bey, and the mother in the "Head Start" piece is Shaelyn Newton. Both names are correct in the online version of the magazine.

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GROUND WORK

The vision for the Almono site in Pittsburgh's Hazelwood neighborhood conveys the project's significance, but it's the progress on the ground that reveals how much has been invested.

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Learning more about how babies develop can guide public policy in areas such as education and health so that both children and communities thrive.

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When residents, including children, have the chance to help design play spaces in their own communities, everyone can enjoy the process and the outcome.

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NEXT STAGE

As work on the Almono development in Pittsburgh's Hazelwood neighborhood picks up speed, it's a reminder of how far the transformation of the former steel mill site has come. By Jeffery Fraser

Photo taken by Seth Zora. Courtesy of AerdiA.com

Almost all remnants of LTV Steel's Hazelwood Works are gone, with the Mill 19 building, foreground, among the exceptions. But plans call for filling the vast, open space with a sustainable mixed-use community that will be another revitalization asset in the region.

It was named for the hazelnut trees that graced the banks of the Monongahela River. It was once crowned by a city newspaper as "the choicest suburban section" in 19th-century Pittsburgh for its fine homes, splendid lawns and unobstructed view of the river and forested valley below. It has been a pillar of the region's Industrial Age, a steel producer for more than 100 years whose sprawling mill brought unprecedented growth, prosperity and the sulfurous odor of heavy pollution. It has loomed as a specter of post-industrial decline and stood as an example of the resiliency of a neighborhood to endure decades of disinvestment and increasing isolation.

Another chapter of Hazelwood's history is being written and it is no less dramatic. On the 178 acres of riverfront brownfield where LTV Steel's Hazelwood plant closed in 1998, a high-profile experiment in sustainable community development is taking shape.

It is a future first imagined when The Heinz Endowments and the Richard King Mellon, Benedum and McCune foundations bought the abandoned site for $10 million in 2002. They named it Almono after the city's three rivers, which include the Allegheny and Ohio, as well as the Monongahela.

The partnership's master plan is that of a harmonious blend of housing, offices, research and development, light manufacturing, retail, parks, trails and transportation efficiency. It's to be a sustainable mixed-use development, a miserly energy consumer that also employs green infrastructure to help solve local stormwater management problems rather than exacerbate them and is mindful of avoiding the environmental insults the previous tenant imposed. A model 21st-century community integrated with the old through the use of strategies for shoring up the existing Hazelwood neighborhood and raising the quality of life of those who've survived years of decline and now have the chance to participate in its resurgence.

The gradual loss of steel dealt Hazelwood a staggering blow.

When steelmaking was humming, nearly 5,000 people were employed by the plant, which Jones & Laughlin Steel built and operated before selling it to LTV. In 1960, nearly 12,800 people and 200 businesses called Hazelwood home. By 2010, slightly more than a decade after operations ceased at the mill, the neighborhood's population had fallen to 4,300. The incomes of nearly 24 percent of its residents fell below the federal poverty threshold. Nearly 30 percent of residents did not have a high school diploma. And one of every five houses in the neighborhood stood vacant.

Recent years have brought improvements visible to all through the hard work of dedicated residents, nonprofits, local government, and foundations, with funding from public and philanthropic dollars as part of a holistic strategy to position the neighborhood to seize the opportunities Almono is expected to generate.

The Carnegie Library Hazelwood branch was rescued from closure and relocated in a shuttered Second Avenue church that had been purchased and renovated to green building standards with support from the Endowments. A new community center also occupies the building, as does an early education and family support center. A few blocks away, a Propel charter school returned public education to Hazelwood when it opened with philanthropic support in a former public school building that had closed a decade earlier.

Almono is situated on a 178-acre parcel on the northern bank of the Monongahela River, about 3 miles from Pittsburgh's Downtown.

Where the LTV Steel Hazelwood plant stood, the cold-finishing mills, furnaces, coke ovens, quenching stations, and paint, welding, pipe and carpentry shops have been razed. The site has been remediated and graded tabletop flat. Financing to pay for infrastructure and other necessary preparations has been raised, including the largest tax-increment financing offer in city history.

More recently, pavement is being laid for the development's main artery, Signature Boulevard, the city's first complete street designed for motorists, pedestrians and bicyclists to safely share. Uber is testing its autonomous vehicles on its test track at one end of the site. And a former bar mill, the largest remnant of steel's might, is being transformed through sustainable design as a place for research and advanced manufacturing. "Almono," said Endowments President Grant Oliphant, "is in position to launch."

After more than a century, Hazelwood is being reunited with its riverfront. h

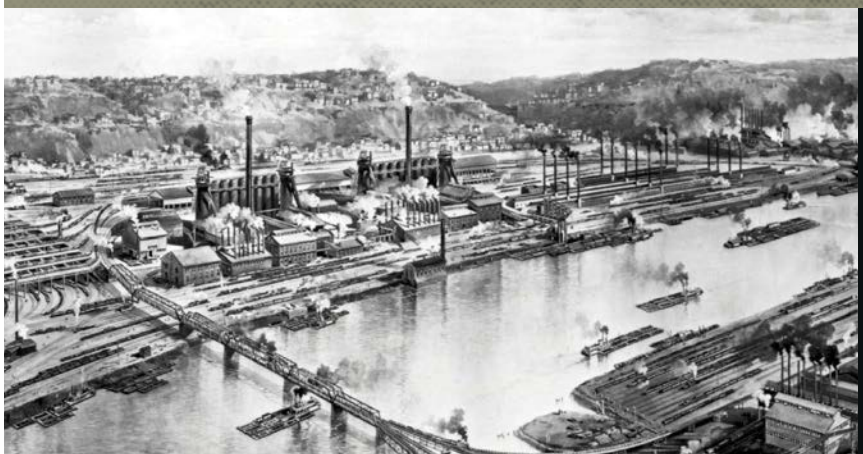
Jeff Fraser is a Pittsburgh-based freelance writer and frequent contributor to *h*. His last set of stories for the magazine, published in Issue 2, 2016, highlighted the "just community" aspect of The Heinz Endowments' promotion of a "Just Pittsburgh." The articles looked at issues such as sustainable design, support for veterans' transition to civilian life, and the economic and social equity focus of last October's p4 conference on sustainable development.

MINING ALMONO'S HISTORY:

From coal-fired furnaces to plans for energy-efficient homes and offices, the Almono development is part of a historic evolution of the Monongahela River's north shore in Pittsburgh. By the late 1800s, the site was embedded within the city's role as the nation's iron and steel making capital, which was fueled by the abundance of coal in the region. But the decline of the steel industry a century later led to a downward turn in the fortunes of the Hazelwood neighborhood and its steel mill. Today, the community is on the upswing, and Almono is revitalizing its formerly industrialized riverbank.

1876

The Soho Furnace was one of the early industrial plants to occupy part of what is now the Almono site. Located on Second Avenue — today Hazelwood's main thoroughfare — and Brady Street, the Soho Furnace produced pig iron and steel, and was owned by Laughlin & Company, which later became Jones & Laughlin Steel Corp.

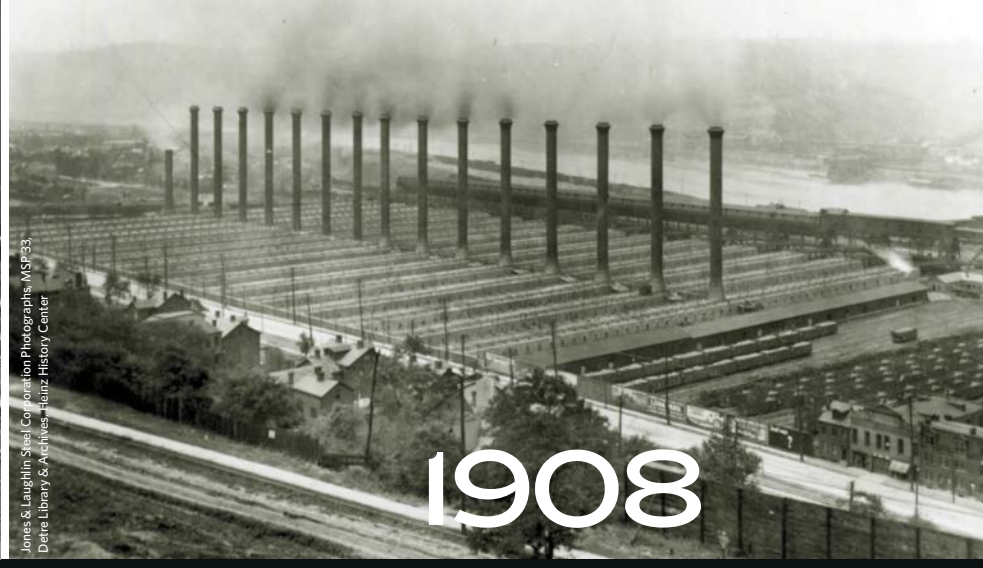


Jones & Laughlin Steel Corporation Photographs, MSP 33, Detre Library & Archives, Heinz History Center

1902

The Jones & Laughlin Pittsburgh Works stretched along the northern bank of the Monongahela River on the site today known as Almono. By 1901, the complex included beehive coke ovens and four modern blast furnaces called Eliza furnaces, in keeping with the practice at that time of naming furnaces after wives, daughters and mothers. "Eliza" was a common name in both the Jones and the Laughlin families. In 1904, a fifth blast furnace was built and the annual capacity of the complex reached more than 1 million tons of metal.

Pittsburgh City Photographer Collection, 1901-2002, AIS.1971.05 Archives Service Center, University of Pittsburgh



Jones & Laughlin Steel Corporation Photographs, MSP33. Detre Library & Archives, Heinz History Center

1908

1906

It was important for a bustling steel-producing community like Hazelwood to maintain its infrastructure. This meant that even more than a 100 years ago, street and pipeline work on the main thoroughfare of Second Avenue attracted attention.

The beehive coke ovens at Jones & Laughlin produced the coke that was necessary for the production of steel. When coal is baked inside the ovens, moisture and volatile chemicals are eliminated, leaving a porous material that is almost pure carbon.

Photo by Jack Delano

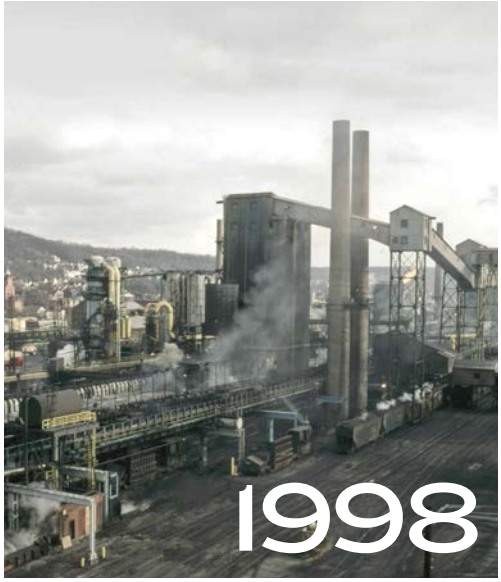
Hazelwood had the look and feel of a "mill district" when steelmaking was at its height in Pittsburgh. Gray, smoke-filled skies were part of everyday life for people like those photographed here from the top of wooden steps connecting Sylvan Avenue and Chance Way in the neighborhood.

1940

1953

As Jones & Laughlin Steel Corp. grew, so did Pittsburgh, evidenced by the construction in 1953 of the Penn-Lincoln Parkway, which stretched past Jones & Laughlin's Eliza Works into the city's eastern suburbs. Penn-Lincoln would eventually become part of I-376 and would be known locally as Parkway East and Parkway West.

Jones & Laughlin Steel Corporation Photographs, MSP 33, Detre Library & Archives, Heinz History Center



Ken Kobus Photograph Collection, ca. 1980–990s, AIS.2006.18
Archives Service Center, University of Pittsburgh

2002

Jones & Laughlin merged with Republic Steel in 1984 to form LTV Steel Corp. Although the steel industry was already in decline by then, LTV held on until 1998 when it officially ceased operations. Left is LTV Steel's Hazelwood Works during its last week of operations in June 1998. Later, in 2002, as part of the sales deal with four Pittsburgh foundations, including The Heinz Endowments, LTV officials agreed to completely demolish the few remaining structures connected to the old mill.

Richard Kelly

2015

The Thrival Music Festival culminates an innovation conference, a combination dreamed up by a group of young entrepreneurs interested in nurturing startups in Pittsburgh. The venue for the two-day rock concert has varied as attendance has grown. In 2015, more than 11,000 people attended the event on the Almono site, where a laser show lit up Mill 19 with brilliant colors.

The Almono development's Mill 19 building may appear to be an empty hulking presence now, but plans all for a renovation that will rival the office buildings of Pittsburgh's Downtown skyline just a few miles in the distance.

Pieces are falling into place for the envisioned sustainable mixed-use community currently called Almono. With each step forward, from planning to construction, the development project that's been more than a decade in the making is becoming a reality. By Jeffery Fraser

GROUND WORK

PIGEONS COME TO ROOST INSIDE THE GHOSTLY MILL 19, A CAVERNOUS 180,000-SQUARE-FOOT FORMER BAR MILL, THE LARGEST REMNANT OF LTV STEEL'S HAZELWOOD WORKS THAT DOMINATED THE NEIGHBORHOOD'S RIVERFRONT WHEN STEEL STILL RULED THE REGIONAL ECONOMY. THE BIRDS' LODGING DAYS ARE NUMBERED.

Construction begins this year to transform the Industrial Age relic into a hub of the region's innovative economy, a center for research, robotics and other advanced technologies built to sustainable design standards on the City of Pittsburgh's last great brownfield known as Almono.

Just north of the future technology center, Uber recently subleased the historic roundhouse, transforming the place where rail cars that were the beasts of burden at the steel and coke operations were once serviced into a testing ground for self-driving vehicles guided by artificial intelligence. Nearly complete is the paving of the 1.5-mile-long Signature Boulevard, Almono's main thoroughfare, which is designed as a "complete street" with unusually wide rights of way to comfortably accommodate cars, buses, pedestrians, bicyclists, utilities and sustainable stormwater management infrastructure.

Realizing the vision of converting the former Hazelwood works from an industrial wasteland to a model of sustainable mixed-use community gained momentum last year. It has taken more than a decade of site remediation, planning and overcoming other challenges that tested the patience of the $10 million in "patient money" The Heinz Endowments, Richard King Mellon Foundation, Benedum Foundation and McCune Foundation invested in 2002 to buy the 178-acre brownfield.

None of the recent developments are more influential to moving that vision forward than those that involve the renovation of Mill 19, which planners now call the Mill Building.

The first stage of the $80 million repurposing of Mill 19 is the construction of a 65,000-square-foot net-zero–energy building within the steel shell of the former mill to retain a glimpse of Hazelwood's industrial past. Scheduled to open in 2018, it will be the first large-scale demonstration of the level of sustainable design Almono is expected to showcase.

The tattered mill roof is to be peeled off, and a canopy of solar panels will be attached to the industrial skeleton, fusing past and present while generating

Photograph by Martha Rial
In collaboration with Edith Abeyta, Arts Excursions Unlimited and the residents of Greater Hazelwood.
In partnership with the Carnegie Library of Pittsburgh-Hazelwood, and the Office of Public Art.

Jeff Fraser is a Pittsburgh-based freelance writer.

some of the electricity used inside. The new steel-and-glass building nestled within the old mill will hold three floors for office, research and light manufacturing use. Plans for a plaza twice the size of Downtown's Market Square, include retail and the possibility of high-density housing nearby.

Developing the project is the Regional Industrial Development Corporation of Southwestern Pennsylvania, which shed its former position as Almono general partner last year to take on the new role. In October, RIDC paid a nominal fee to buy the Mill Building from the partnership of foundations that own Almono in exchange for its equity share in the project. This marked an important juncture in the project, how it is managed and the development strategies that will guide it.

Numbers crunching: The ambitious vision for the Almono project in Pittsburgh's Hazelwood neighborhood calls for the creation of a sustainable development that integrates urban design, job creation, aspirational environmental standards, and community access and participation. Achieving these goals requires investments of time, energy and money that have already been significant.

"The site needed to be prepared, have basic infrastructure put in place, and it needed someone to go first," said Endowments President Grant Oliphant. "RIDC's willingness to be first to develop there and develop to a very high standard of sustainability on a very difficult parcel strikes the right tone for the rest of Almono and makes the site attractive to other developers."

Remake Group, a sustainable development and design consultant, has assumed much of RIDC's previous role of directing the broader Almono project. Rebecca Flora, Remake Group president and CEO, has considerable local sustainable development experience. She is a former executive director of the Green Building Alliance and has worked on signature projects in the city, such as the development of Washington's Landing. More recently, she led the development of the city's first set of sustainability metrics for guiding planning and development.

With the sale of the Mill Building property, the partnership has begun to explore the idea that rather than hold out for a master developer to emerge, the rest of the Almono site can evolve through the work of several local and national developers with the capacity to build out the site in harmony with the Almono master plan that is being developed and the sustainable design principles at the heart of it.

"We've realized that a place like Pittsburgh really does need both local and national developers driving an incremental development agenda," said Rob Stephany, director of the Endowments' Community & Economic Development Program. "We think that yields more authentic places. And our local developers are getting better at high-quality design and place-making."

Uber's decision to use the roundhouse and the zone around it to test the self-driving vehicles it is developing brought Almono its first tenant and the cachet of having landed one of the most highly capitalized and growing young technology companies in the world. "It's one of the ways you gain visibility and change perceptions and generate interest," Ms. Flora said. "You get people looking at the site differently and seeing possibilities rather than just a landscape."

THE POWER OF 32, A COALITION OF 32 COUNTIES IN WESTERN PENNSYLVANIA, WEST VIRGINIA, OHIO AND MARYLAND, HAS GIVEN THE PROJECT A $9.5 MILLION LOAN FOR THE SIGNATURE BOULEVARD. THE MONEY IS FROM A FUND CREATED TO SUPPORT EXPANSION OF THE NUMBER OF PAD-READY COMMERCIAL AND INDUSTRIAL SITES IN THE REGION.

$9.5

Martha Rial

1,000,000

ONE MILLION CUBIC FEET OF FILL AND GRADING FOR SITE

$80,000,000

LARGEST TAX INCREMENT FINANCING DISTRICT APPROVED SO FAR IN THE CITY'S HISTORY

$27

$27 MILLION ONSITE ROAD AND UTILITY PACKAGE NEARLY COMPLETE

$ 14

$20

$14 MILLION IN GRANTS, **$20 MILLION** IN LOW-INTEREST LOANS SECURED IN ADDITION TO PARTNERSHIP FUNDING

Before Uber Technologies debuted its self-driving car in Pittsburgh last spring, the company sent out a fleet of its manned vehicles to map out the roads and topography. Uber is constructing test roadways for its driverless cars at the Almono site.

Jeff Swensen

Uber's decision to use the roundhouse and the zone around it to test the self-driving vehicles it is developing brought Almono its first tenant and the cachet of having landed one of the most highly capitalized and growing young technology companies in the world.

RIDC has announced that it will move its offices into the Mill Building. It also reports contact with other companies expressing interest in setting up shop there, particularly those that benefit from the major research universities just over the hill in the city's Oakland neighborhood, including technology, advanced manufacturing, robotics and information technology firms.

Challenges to Almono's marketability remain, however.

The large scale and complexity of the project makes it a difficult sell to developers without subsidies to lessen their costs and risk. Private and public money, including a tax increment financing plan approved by the city, are largely targeted at building out infrastructure, such as utilities, roads, geothermal wells and piping, parking, and grading and seeding of parks and plazas.

Work is nearly complete on the $27 million Signature Boulevard to make it a greater "pad-ready" attraction. Estimates for infrastructure exceed $100 million with $43 million already invested

The Endowments and Richard King Mellon Foundation have approved further investments in the site to help pay for infrastructure in and around the Mill Building. Other recent infrastructure funding includes a $9.5 million loan for the Signature Boulevard from a fund that was created by the Power of 32, a coalition of

32 counties in western Pennsylvania, West Virginia, Ohio and Maryland, and dedicated to expanding the regional inventory of pad-ready commercial and industrial sites.

The limited inventory of move-in–ready sites is a disadvantage when competing for companies looking to expand or relocate, said Dennis Yablonsky, executive director of the Allegheny Conference on Community Development. "For the last seven years in a row, the number one overwhelming reason we lose is that we don't have available pad-ready sites or buildings for people to move into very quickly. Our competitors have more."

The need for off-site improvements has concerned some developers who've otherwise been impressed by Almono's proximity to university talent and its sustainability ambitions. Some $7 million in transportation improvements have been made, but there is consensus among public- and private-sector officials that much more is necessary. In fact, road, public transit and other transportation connections to Downtown and Oakland remain a challenge in and around Hazelwood despite $1 billion invested in the neighboring Southside Works and Pittsburgh Technology Center, two earlier brownfield redevelopments in the city.

"How many people got lost coming here?" Pittsburgh Mayor Bill Peduto asked those attending an October press conference at Almono, receiving more than a few laughs. "We have 19th-century roadways going into a model of 21st-century development. This is a place where people from around the world will come to study how we created the highest level of sustainability on a site that was heavy industry. But we have to directly connect it to Oakland—make sure that the connection to the University of Pittsburgh, Carnegie Mellon [University] and UPMC is an easy one and that we connect that to the Allegheny River to make sure that from river to river there is the opportunity for new economy jobs."

Although still a work in progress, there is evidence Almono and the experience gained over its 14-year development history is lending momentum to sustainable development throughout the city and region. RIDC, for example, is employing sustainable design and practices as it converts the former Heppenstall Steel Company site to a new urban technology park in Lawrenceville. "We are using a lot of things we've learned along the way [at Almono]. Anytime you push the envelope, you learn more about what is possible," said RIDC President Don Smith.

Meanwhile, several trends suggest that conditions are more favorable than ever before for developing sustainable communities around Pittsburgh's innovation economy. Advanced industries are increasingly seeking to be in close proximity to networks of researchers and entrepreneurs found at research universities, such as Carnegie Mellon and Pitt. Local evidence of the trend includes Google's arrival in 2006 and the 2015 opening of Uber's Advanced Technologies Group in the city's Strip District neighborhood. The region's recovery from the traumatic collapse of steel and other heavy manufacturing led to a highly diverse economy strong in science, technology, health care and other industries at the core of an innovation economy. And investors, when choosing companies, are increasingly considering measures of sustainability performance.

Development of the former Hazelwood steel mill as a sustainable mixed-use community mindful of elevating the quality of life of its neighbors also comes as the city has turned to the principles of sustainability to guide the drafting of a comprehensive plan and development metrics. At the same time, market dynamics that are key considerations of developers are improving in the region, particularly in the city, which is experiencing a surge in neighborhood revitalization, as well as in new residential units and hotels.

Recent progress at Almono, said Mayor Peduto, "is a huge step for the region, not just the city or county. It shows other areas that haven't yet felt the effects of the new economy what can happen in their town with their old industrial sites. It has the potential to extend far beyond the borders of the City of Pittsburgh." h

CHALLENGES

WHILE THE POTENTIAL BENEFITS OF THE ALMONO PROJECT TO THE HAZELWOOD NEIGHBORHOOD AND THE PITTSBURGH REGION ARE CONSIDERABLE, THERE ARE CHALLENGES TO PREPARING THE SITE AND ATTRACTING DEVELOPERS.

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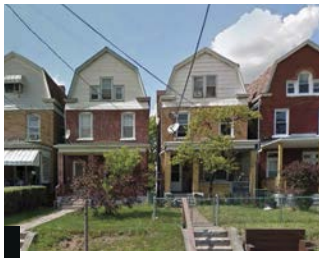
MASS TRANSIT

Connections to the business sector in Downtown Pittsburgh and university talent in the Oakland community are critical to drawing developers to the site. But road, public transit and other transportation avenues remain a challenge in and around Hazelwood, despite $1 billion invested in neighboring developments that were former brownfield sites.

INFRASTRUCTURE

Infrastructure costs are significant to ensure that the Almono site is an attractive development site. The Signature Boulevard expenses are expected to total $27 million, while the remaining on-site infrastructure costs would add an additional $42 million.



NEIGHBORHOOD

Efforts are being made to be mindful of elevating the quality of life of Almono's Hazelwood neighbors as the site is being developed in a sustainable mixed-use community. Maintaining that connection to the existing community will be important, especially as market dynamics are improving the region and Pittsburgh is experiencing a surge in neighborhood revitalization.

CENTER OF ATTENTION

The vision for the Mill 19 building is that the 180,000- square-foot structure will be transformed into a local amenity and a regional destination that exemplifies the type of sustainable design the Almono project will showcase. While the steel shell will be reminiscent of Hazelwood's industrial past, proposals call for constructing within the walls offices, research and development spaces, and areas for small-scale production, which together will maintain net-zero energy use.

Paving of the Almono site's main thoroughfare, the 1.5-mile-long Signature Boulevard, is almost complete. The road is designed as a "complete street" with unusually wide rights of way that can accommodate cars, buses, pedestrians, bicyclists, utilities and sustainable stormwater management infrastructure.

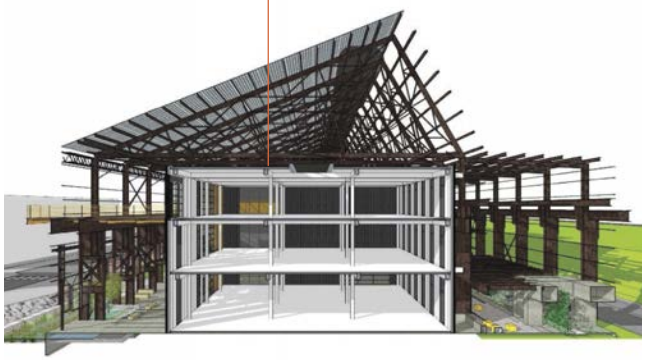
Perkins+Will

A steel bridge will stretch over the Mill 19 channel to the building's south porch. The channel will be a public rain garden designed to handle on-site stormwater. Its landscaping design includes the use of recycled concrete, steel and stone from the Mill 19 site to create terraces and seating areas among vegetation that is native to Pennsylvania.

The $80 million renovation of Mill 19 includes in its first phase the construction of a 65,000-square-foot, net-zero energy building within the steel shell of the former mill. The interior building will hold three floors for office, research and light manufacturing use, while the shell's roof will be peeled off and replaced with a canopy of solar panels to generate some of the electricity used inside.

This rendering of a Mill 19 section shows how the new three-story research-and-development building, illustrated in white, will be situated within the steel shell of the larger structure. Overhead will be a solar panel array, to the left will be the rain garden channel and a public, open-air walkway, and on the right will be the "ruin garden."

Tentatively called the "ruin garden," the space on the east side of Mill 19 once contained sets of motor generators. All the generators were removed long ago, but the massive concrete foundations remain and will be incorporated into a new contemplative landscaped area.



All renderings by MSR Design, Ten x Ten, D.I.R.T. Studio, Renaissance 3 Architects

NURTURING

RESEARCH ON BRAIN DEVELOPMENT IN BABIES REVEALS MANY WONDERS OF THEIR GROWTH. THE FINDINGS ALSO OFFER A KEY TO ADDRESSING A RANGE OF PUBLIC POLICY ISSUES AT THE EARLIEST STAGE POSSIBLE. BY CHRISTINE H. O'TOOLE

Chris O'Toole is a Pittsburgh-based freelance writer and frequent contributor to *h*. Her recent articles in the magazine were published in Issue 2, 2016. One looked at efforts to make fresh produce available in urban communities while the other examined initiatives designed to ensure that local babies are born healthy and thrive.

Connecting neurons at amazing speed, an infant's brain is literally a thousand points of light. In the first months of life, a baby forms some 700 synapses per second, building the ability to recognize patterns of light and sound, bond with caregivers, and gradually regulate behavior.

For the next few years, the infant brain actually prunes away synapses. In adulthood, most humans will learn at a far slower rate. That means that investing in infant development may be far more urgent than addressing later deficits.

"Timing is everything," Nathan Fox, professor of human development at the University of Maryland, told a fall conference at Carnegie Mellon University. "Neurons to Neighborhoods" invited researchers, early education professionals and policymakers to consider the intersection of their fields at a first-of-its-kind meeting sponsored by Carnegie Mellon's BrainHub. The interdisciplinary research center uses technology to support those on the front lines of education and health science.

Executive Director Gerry Balbier called the conference "a rare opportunity. Our faculty wants to have an outlet, here and potentially nationally, to disseminate findings in a way that can be applied."

In the Pittsburgh region, brain research already has been used in the formation of early childhood education programs and family services initiatives. More recent research findings, like those presented at the conference, are attracting the interest of education and civic leaders who see potential in applying the work to efforts to push for more public policy addressing issues affecting children and families.

"We remind our representatives that families, particularly two-worker families, want their child care providers to apply the best possible practices to help babies thrive," said Patrick Dowd, executive director of Allies for Children, which integrates research into public debate on health and education priorities.

Mr. Dowd added that the conference presentations reinvigorated the arguments he presents to legislators on children's issues. The Heinz Endowments has made a $48,500 grant to support a series of three gatherings addressing brain research across the lifespan. The first meeting attracted more than 50 professionals from across the United States.

"The Heinz Endowments is excited about these convenings, because they build from [Chair Emeritus] Teresa Heinz's initial idea of the first [early brain development] conference more than a decade ago, which provided an opportunity for science and practice to come together to create positive impact for our children, families and communities," said Michelle Figlar, the foundation's vice president of Learning. "This time we have the tremendous opportunity to utilize the resources of the BrainHub to go beyond early childhood and look at brain development through the lifespan, and intentionally connect this research to policy and practice. We also hope to incubate ideas of how multi-disciplinary teams can work together to influence public policy."

Over the past two decades, new imaging technologies developed at Carnegie Mellon and elsewhere allow researchers to observe the brain in action. The results emphasize that in babies' brains, emotional development is as important as meeting cognitive milestones. Stable, caring relationships and face-to-face interactions shape brain architecture in early years, supporting lifelong learning, behavior and even physical health. Conversely, neglect, abuse or poverty may send very young brains off the rails.

As research progresses, scientists are homing in on critical windows of times in brain development. Those "sensitive periods" are points when the effect of experience on brain development can be particularly strong—for example, when acquiring visual information or early language. Molecular biologists are racing to specifically

identify when such critical periods occur and how missed developmental opportunities can be remediated later in life.

Nearly a century ago, animal behavior specialist Konrad Lorenz conducted his study of attachment between newborn goslings and the first moving objects they saw. The famous image of the geese trailing him across a field proved his theory that the bond between infants and caregivers was instinctive and triggered through environmental stimuli. Conference presenters demonstrated how emotional attachment affects human brain development.

Dr. Fox discussed results of his comprehensive 18-year study of children in Bucharest, comparing the development of Romanian toddlers raised in large orphanages with those in birth or adoptive families. Electroencephalograms measured slower brain activity, or alpha waves, in institutionalized children. Gauges of cortisol, a stress-related hormone, showed that emotional neglect blunted their response to stress. But children adopted from orphanages showed the ability to rebound from adversity, especially before 24 months of age. While the children's ability to catch up declined after that point, the findings confirm that a caring environment can rescue and rebuild the brain.

Nim Tottenham, associate professor of psychology at Columbia University, reviewed research on the key role of early caregivers, when the baby's amygdala is highly sensitive to threats. She focuses on the amygdala, which creates the basic fight-or-flight response, and the prefrontal cortex, which governs cognition, personality and decision-making. The circuit between the two, developing slowly over time, regulates emotions.

Brain imaging shows that the presence of a stable caregiver decreases the reactivity of a young child's amygdala. "An infant can't fight or flee—because, let's face it, they wouldn't be good at either," she said. "Their survival mechanism is to attach. When the caregiver meets the needs of the child, the brain has the luxury of plasticity," the ability of the brain to reorganize and learn.

The amygdala's most sensitive developmental period appears to occur before age three; by contrast, mental illness, mood disorders and substance abuse, related to difficulties in emotion regulation, present much later in adolescence.

"That tells us we'd better pay attention to what happened during childhood, when the environment affects the architecture of the system," Dr. Tottenham insisted. "If we know why, we're better equipped to intervene later on."

The leader of a new national effort to provide brain science to parents and caregivers echoed Dr. Tottenham's remarks. "There is no early childhood learning without relationships," said Ellen Galinsky, author of "Mind in the Making: The Seven Essential Life Skills Every Child Needs."

Young children instinctively demand interaction with caregivers through rhythmic babbling, facial expressions and gestures. Adults respond with "baby talk" or "parentese"—the same kind of vocalizing and gesturing back at them. The back-and-forth process, called "serve and return," connects all regions of the brain: Babies visualize the actions they will need to speak.

"WE NOW DIRECT MORE PUBLIC SPENDING AS THE BRAIN BECOMES MORE STABLE, BUT WE ARE LACKING THE PUBLIC INVESTMENT WHEN THE BRAIN IS DEVELOPING THE FASTEST."

Natalia Rudiak
Pittsburgh City Councilwoman

Ms. Galinsky is the chief science officer at the Bezos Family Foundation, which is supporting new public outreach efforts through the Vroom campaign. Created in conjunction with Harvard University's Center on the Developing Child, Vroom's website, www.joinvroom.org, and free mobile app suggest quick, simple interactions that build young brains. The program now reaches 100,000 users.

Examples of successfully applied developmental research on attachment include the Allegheny County Department of Human Services' prevention and intervention programs. Erin Dalton, who directs research and evaluation activities for DHS, told the audience at the conference that DHS policy now avoids traumatic out-of-home placements in its Children, Youth and Families programs whenever possible, reducing such cases from 3,500 to 1,200 over the past 20 years. Recognizing that children placed with relatives fare better than those in foster care, it works to find family members to become caregivers.

"Over 60 percent of our foster placements are now with kin," she noted. "But we recognize that often our families have multiple generations with trauma. We need to support all of them."

DHS has documented that services at its regional Family Support Centers help reduce child abuse and neglect. It has coordinated enrollment for home visits for new mothers so that parenting skills and developmental concerns can be addressed promptly. The agency is now studying how predictive risk modeling could identify pregnant clients for intervention from the delivery room onward, to ensure healthy infant growth and brain development.

Despite such success cases, however, governmental restrictions can thwart efforts to apply better brain research.

Ms. Dalton cited interagency pitfalls that hamper interventions. "The federal structure gives [the county] funds only for children removed from the home, not in-home intervention," which comprises 95 percent of DHS's practice. Pennsylvania data could illuminate Allegheny County's incidence of children with numerous adverse childhood experiences (see sidebar), but some of the state's PeopleStat statistics are not yet shared with counties.

"We need help to translate research into interventions that work," she said. "We need to support our workforce in the difficult decisions they're forced to make."

Quality standards for early education programs, like the Keystone STARS program in Pennsylvania, have helped working families find safe and stimulating settings for their preschoolers. The system has recently reemphasized the importance of "serve and return" activity.

Professional training helps early education staff understand their charges' developmental milestones; in turn, a well-qualified staff allows centers to qualify for increased per-child subsidies. But the demand for those programs far exceeds the supply. At present, there is a waiting list of 400 for spots in Pittsburgh Public Schools' existing pre-K classrooms. The city has established an Office of Early Childhood to work toward universal pre-kindergarten programs for children ages 3 and 4, with additional support for caregivers of babies and toddlers.

City Councilwoman Natalia Rudiak, who has spearheaded the drive for better early education and child care options for Pittsburgh's working families, told the audience that the cost of enrolling all preschoolers not eligible for other subsidies in quality programs would cost the city $36.2 million. But she also cited well-known work by James Heckman, a Nobel Prize–winning economist; he has estimated the long-term return on public investment in early childhood programs at 7 to 10 percent.

Working with the Women's Caucus of City Council, Ms. Rudiak has redirected $250,000 in city economic development funds to help child care providers improve safety and quality.

"We now direct more public spending as the brain becomes more stable, but we are lacking the public investment when the brain is developing the fastest. How do we increase that?" she asked. Her answer: political science, rather than neuroscience.

"We need to elect more women advocates," she said.

As BrainHub prepares for a follow-up conference on adolescent brain research this spring, the center's executive director expects that the research presented will provide additional ammunition for farsighted policy decisions.

"We know scientific breakthroughs have served public education," Mr. Balbier said. "We've opened a door to keep on doing this and make it broader, engaging parents more." h

ADVERSE IMPACT

Research on children's earliest social and emotional encounters shows that abuse and neglect harm children's cognitive development. At Carnegie Mellon University's BrainHub conference, several scientists cited new data from the Adverse Childhood Experiences (ACE) study, which has been championed by nationally recognized San Francisco pediatrician Dr. Nadine Burke Harris. The study found that the more toxic experiences children face, the more likely they are to suffer chronic illnesses like heart disease and diabetes in adulthood. These results prove that emotional trauma actually changes chemicals in both the brain and the body.

Dr. Burke Harris, who was in Pittsburgh in October to receive the 2016 Heinz Award for the Human Condition, has effectively used ACE data to illuminate health disparities, explaining that children are especially sensitive to repeated stresses at home.

"High doses of adversity not only affect brain structure and function, they affect the developing immune system, developing hormonal systems, and even the way our DNA is read and transcribed," she told a recent TED audience.

Using a simple 10-question quiz, the survey assigns one point to each experience. The higher the score, the more challenged the child is likely to be as an adult.

"If my patient has an ACE score of 4, she's two and a half times as likely to develop hepatitis or chronic pulmonary disease, she's four and half times as likely to become depressed, and she's 12 times as likely to attempt to take her own life as my patient with zero ACEs," Dr. Burke Harris said.

Research she and others have conducted reveals that when children are exposed to four or more ACEs, they are twice as likely to be overweight or obese, and 32 times as likely to have learning or behavior problems as compared to children of the same income and ethnicity with zero ACEs.

Poor minority children are not the only ones at risk from ACEs, Dr. Burke Harris noted. The original ACE study was done in a population that was 70 percent Caucasian and 70 percent college-educated.

Pittsburgh's second p4 Summit unveiled some of the city's efforts to incorporate equity and sustainability into the development of its

Dave DiCello

changing landscape. Plans include unique measures to ensure that the goals are achieved and all residents benefit. By Jeffery Fraser

SUSTAINING STRATEGIES: MAKING PROGRESS WITH p4

Jeff Fraser is a Pittsburgh-based freelance writer and frequent contributor to *h*.

The development landscape in the City of Pittsburgh is shifting, spurred by new performance measures that are intended to guide public investment toward projects that best align with the principles embraced by a citywide sustainability initiative that inspired them.

More than 140 people, ranging from city planners to developers, builders and neighborhood nonprofits, lent their insights and expertise to drafting a dozen measures on which proposed projects competing for city subsidies will be judged, including how they address equitable economic opportunity, affordable housing, energy use, stormwater management and design.

Joshua Franzos

“Previously neglected neighborhoods around Pittsburgh are suddenly becoming hot or have the potential to become hot because of those trends. That has profound ramifications for the people who live in those neighborhoods, and it has profound implications for the people moving into those neighborhoods.”

Grant Oliphant, president, The Heinz Endowments

No other city has taken a more inclusive approach or has come up with a more comprehensive set of sustainability metrics for development than those introduced in October at the p4 Summit, which focused on the themes of people, planet, place and performance. The measures serve as tangible evidence of the city’s progress along the course to a sustainable future that was imagined at the first such conference, which took place 18 months earlier and provided a framework for the citywide effort.

“This is a conversation we probably wouldn’t have been having 10 years ago when Pittsburgh was desperate for development,” said Grant Oliphant, president of The Heinz Endowments, which has supported the p4 sustainability initiative and summit from its earliest days. “We’re now operating in an environment where more development is happening and pending. The city is benefiting from its own rebound and a global back-to-the-cities movement.

“Previously neglected neighborhoods around Pittsburgh are suddenly becoming hot or have the potential to become hot because of those trends. That has profound ramifications for the people who live in those neighborhoods, and it has profound implications for the people moving into those neighborhoods.”

The October conference drew some 600 people representing local government, neighborhood organizations, architecture and design, education, philanthropy, community development, human services and others. Attendance was about twice that of the inaugural gathering in April 2015.

New urban models are emerging as market and demographic forces drive a migration away from the sprawl of suburbia and into cities. From Nashville to Copenhagen, an increasing number of cities are cultivating innovation economies and redesigning themselves around sustainable strategies that place a premium on quality of life, environment and equal opportunity as a means of attracting people and investment, and improving their chances for growth and stability. In 2015, Pittsburgh Mayor Bill Peduto announced the city’s intention to join them and create a model of urban sustainability in the process.

Last fall’s p4 conference featured more than two dozen local, national and international experts who shared their expertise and ideas from the stage, and in a series of workshops covering a range of sustainability issues related to

#p4pgh

Neighborhood Allies @nhbdalliespgh

#p4pgh focused on actions to ensure that, as PGH grows and prospers, our residents and neighborhoods do too

Divya Heffley @futuresites

“Stay focused on rebuilding the meaning of we.” Grant Oliphant, on the future of #AllInPittsburgh @go_grant@p4pittsburgh #p4pgh #inclusion

KnowledgeBuildHudson @KnowledgeBuild

It’s gonna take leadership from everyone here. True leaders create leaders not followers- @billpeduto of @CityofPgh at #p4pgh

The October p4 conference took community conversations and brainstorming to a new level as about 600 people from various sectors in the Pittsburgh region gathered to discuss a more just and sustainable future for Pittsburgh. 1 > The two-day conference took place Downtown at the David L. Lawrence Convention Center, where the full group met in the large ballroom, and breakout workshops occurred in separate meeting rooms. 2 > Sessions included panel discussions, such as one on equitable development that included, from left, Janera Solomon, executive director of the Kelly Strayhorn Theater; Rosamaria Cristello, executive director of the Latino Family Center; and Pittsburgh City Councilman Daniel Lavelle. 3 > Participants also met around tables to talk about different ways to achieve sustainability, equity and justice. 4 > Probably thousands of Post-it notes were used over the two days to record, organize and report out ideas.

Joshua Franzos

Joshua Franzos

"For decades, the funding and public use of dollars has been determined by political decision-making. An opportunity to compete on an even playing field is something developers have sought for a long time."

Bill Peduto, mayor, City of Pittsburgh

the themes of people, planet, place and performance. Much of the conversation was spent examining those issues through the lens of racial and social equity.

Angela Glover Blackwell had raised equity as an issue deserving of particular attention at the 2015 conference. The CEO of PolicyLink, a national institute for advancing economic and social equity, said she was pleased to return 18 months later to find a city and community that has engaged the challenge of making issues of equity a cornerstone of Pittsburgh sustainability ambitions.

The challenge is significant, data suggest. One-third of African Americans, 25 percent of Hispanics and 20 percent of Asians in the City of Pittsburgh live in poverty compared with 15 percent of whites, according to the University of Pittsburgh's Center on Race and Social Problems. Nearly 60 percent of the region's African American population live in neighborhoods where at least one in five residents is poor.

In the Pittsburgh Public Schools, records show that 59 percent of African American 11th-grade students, 54 percent of Asian and 41 percent of Hispanic 11th-graders are not proficient in reading compared with 24 percent of white students. Despite a steady decline in infant mortality rates in recent years, Allegheny County Health Department statistics reveal that African American families in the county are still 2.7 times more likely to experience the heartbreak of an infant death than white families.

"If we are going to achieve equity, we are going to have to be clear about race. We are going to have to be clear about who is being left behind. We are going to have to face the agonizing, unattractive history of race in our communities," Ms. Blackwell said.

"The story of race in America is played out in every one of our communities. We have to reflect on that, think about how race continues to operate, how it has become institutionalized, how it is no accident that black men are disproportionately incarcerated, that it is no accident that the same communities that have been red-lined are the same communities that are suffering from under-investment, that it is no accident that people have not had access to the jobs that have the biggest possibility of being able to move forward. The things that created the racial inequities did not happen by accident, and they won't be fixed unless we focus on them directly."

Only about 6 percent of the more than 700,000 homeowners in southwestern Pennsylvania were African American, Asian, Hispanic or other minorities in 2010, when they represented nearly 13 percent of the population. African Americans represented 8.3 percent of the population, but accounted for little more than 4 percent of homeowners, according to U.S. Census Bureau data.

In Pittsburgh's Homewood neighborhood, rates of poverty and vacant property are among the highest in the city, and housing values are among the lowest. It's a neighborhood where residents, predominantly African Americans, own only a fraction of the parcels, and the majority of owners include out-of-state and foreign investors.

"When people act like they don't understand what we are talking about in regard to these racial disparities, I actually believe they

Melissa F.
@thefirmangroup
Start small to create #justpittsburgh. Say hi to someone new. Read books by people of a different race. Be welcoming. #p4pgh @p4pittsburgh

Kit Mueller
@kitmueller
"Places are what people dream" @AndrewMcElwaine quoting Teresa Heinz #p4pgh

Tracey Ross
@traceylross
@janerasolomon explains the challenges the black community faces here aren't a black problem … they're a Pittsburgh problem #p4pgh

Josiah Gilliam
@JosiahGilliam
It's been said that the leaders we need are already here. Believe it. #p4pgh #pittsburgh

Kilolo Luckett
@kilololuckett
The most important investment is people #GregSpencer #CEO #RandallChemical Manufacturing #p4pgh

don't," said John Wallace, a Homewood native and pastor who's also a University of Pittsburgh professor with appointments in the schools of social work, business, and arts and sciences. "When you look at the residential segregation, we live in different worlds. When you look at the differences in poverty, when you look at infant mortality, people are many times oblivious to these realities."

To address those issues, PolicyLink and two local nonprofits, Neighborhood Allies and Urban Innovation 21, last year drafted an agenda for advancing racial equity as a central element of Pittsburgh's sustainability strategies. It includes recommendations for raising the bar on new development, increasing opportunities ranging from art and culture to employment in communities, embedding racial equity in city institutions and businesses, and elevating the capacity of residents and organizations to improve their lives and neighborhoods.

Many of the new p4 performance measures raise the bar on equitable development in the city. One metric for housing, for example, is the percentage of units that are affordable to residents in the immediate community. The "opportunity" measure includes the extent developers use Disadvantage Business Enterprises contractors. The number of jobs a project is expected to create, the quality of those jobs, the access to public transit, and whether public input was sought in the planning and design are other metrics considered when projects competing for subsidies and other incentives are evaluated.

More than a year was spent drafting the performance measures through an intentionally transparent process that included a 20-person advisory committee, technical working group, a series of webinars and two roundtable discussions allowing local developers to share their thoughts and expertise.

The result is a stark departure from business as usual in the city, said Pittsburgh Mayor Bill Peduto. "For decades, the funding and public use of dollars has been determined by political decision-making. An opportunity to compete on an even playing field is something developers have sought for a long time.

"Over the past few years, we have seen developers moving in from around the country and invest in Pittsburgh. When asked why they didn't invest before, the response we got from several of them was that Pittsburgh was always perceived to be a closed market—that the favorite sons always got the tax breaks or the incentives. That system of a city that is for sale will forever be gone, and Pittsburgh will be a city open for business."

The hope is that the performance measures will eventually become a benchmark in the city influencing more than those developers seeking public subsidies, said Remake Group CEO Rebecca Flora, who led the development of the p4 measures. "It's the idea that, as people start to understand them, they will become a common language."

The p4 initiative and the performance measures that have emerged caught the eye of the national Strong, Prosperous and Resilient Communities Challenge. As a result, a Pittsburgh collaborative of community organizations was invited to participate in the program's $90 million competition for grants, loans and technical support to be given to strategies that make communities more equitable through the built environment, transit, health, climate

Joshua Franzos

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Angela Glover Blackwell, CEO, PolicyLink

Pittsburgh UNITED
@PghUNITED
Creating a welcoming community to immigrants means more immigrant residents being hired in all sectors and levels of employment #p4pgh

Tracey Ross
@traceylross
Embracing the cultural assets of neighborhoods is important as residents face gentrification @struehaft #p4pgh

BOOMConcepts
@BOOMCONCEPTS
We can't afford to drop how important the arts are in cultivating creativity in the culture #p4pgh@HeinzEndow

Melanieh
@melanieh1
@VibrantBurgh #p4pgh: @lizogbu In the race to make things better you must acknowledge the needs and pain of people that have been there.

Jenna Cramer
@Jenna_Cramer
Everyone matters. Everyone has hopes & dreams. Everyone has value. Everyone has a name. #JustPgh #p4pgh @lizogbu

Joshua Franzos

"When you look at the residential segregation, we live in different worlds. When you look at the differences in poverty, when you look at infant mortality, people are many times oblivious to these realities."

John Wallace, pastor and University of Pittsburgh professor of social work, business and sociology

mitigation and other means. Although Pittsburgh did not win an award, it was one of nine finalists in the program, which was supported by the Ford, Kresge and Robert Wood Johnson foundations.

"What we see as one of the real benefits of [p4] is that it opens the door to national foundations," said Matthew Barron, the Endowments' Sustainability program officer. "Once they're aware of these projects and these groups, there may be other benefits and relationships built that didn't exist previously."

The influence that urban design and planning have on the well-being of a city's residents can be substantial, said Dr. Richard Jackson, who referred to the built environment as "social policy in concrete." As an example, the UCLA professor of Environmental Health Sciences suggested that design that encourages walking, biking and other physical activity could significantly reduce the rate of obesity, a chronic disease that affects nearly one-third of the U.S. population and has led to a spike in the rate of diabetes. By walking 10,000 steps a day, for example, people with Type 2 diabetes reduce the risk of their disease progressing by 58 percent. "There is no drug that works as well as physical activity."

Topography was the most nettlesome obstacle architects faced when trying to re-imagine 28 acres in the Lower Hill District neighborhood of Pittsburgh in ways that invite physical activity, said Kai-Uwe Bergmann, a partner at Bjarke Ingels Group, an international sustainable architecture and design firm. The Lower Hill slopes up to the Middle Hill District neighborhood at a 14 percent grade.

"That means that no one wants to walk," Mr. Bergmann said. "You're not going to bike so much. You're going to privilege the automobile. You're already basically saying that the streets rule."

Their solution was to design a proposed park connecting the two neighborhoods that contains no slopes greater than 5 percent, a grade that is amenable to walking, biking and even pushing a baby stroller.

Taking the ideas that have emerged from the p4 initiative and finding ways to apply them to neighborhoods through community-wide discussions and working groups are critical to moving the city's transition forward, Mr. Oliphant explained.

"We listened to the community and had a lot more community engagement in the p4 conference," he said. "The outcome of an inclusive process is that you have to continue the inclusion. Engaging the community in an ongoing way in the effort to create a just community through the p4 is the next step." h

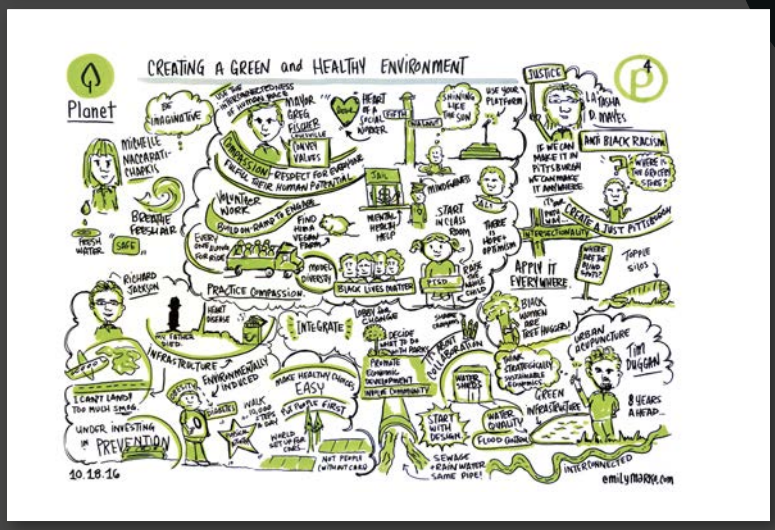
Women for Environment @WHEnvironment
Never make the place more precious than the people. That's real sustainability, real transformation. @NeighborhoodCtr @p4Pittsburgh #p4pgh

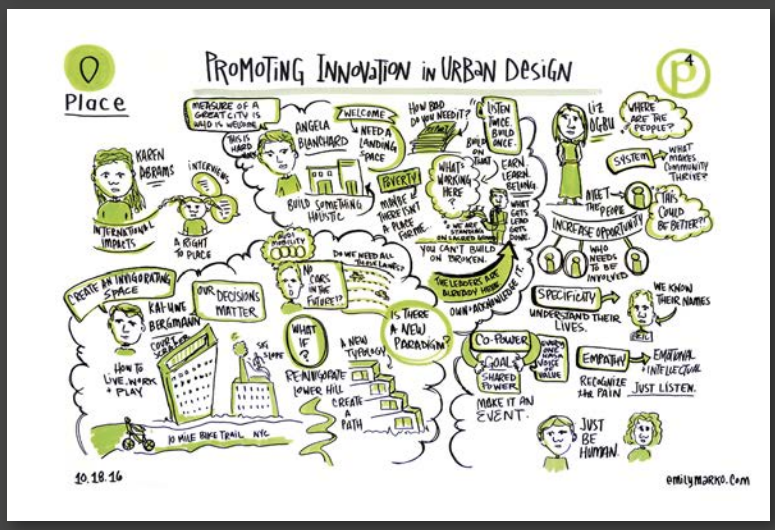
Trade Institute Pgh @TIPgh
The most successful cities … will be those that can most quickly turn desperation and aspiration into participation - @cajunangela #p4pgh

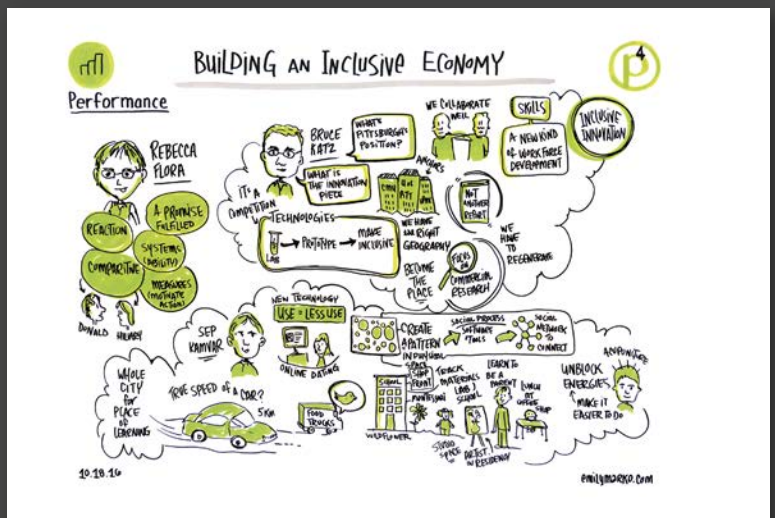
Ben Speggen @BenSpeggen
@louisvillemayor: We are imperfect ppl on imperfect journey, but if we embrace compassion, we will find progress #p4pgh

New Sun Rising @newsunrisingpgh
Placegrowing wisdom 'Build from what neighborhoods already have. Put people at the center of place. Be real about race.' @lMajestic #p4pgh

Gregg Behr @greggbehr
Yes @lMajestic let's make sure that EVERY child awakes every morning w/ genuine possibility Let's @remakelearning in @CityPgh #p4pgh







PANELS DISCUSSION

Communicating the p4 message took different forms during the October conference, from speakers to social media to on-site graphic illustrations. Artist Emily Marko's quick drawing skills followed and interpreted the summit's progression in real time, offering a unique and creative perspective on the days' events.

Joshua Franzos

All of Emily's conference illustrations are available on the p4 website: http://p4pittsburgh.org/pages emily-marko-drawings-documenting-2016-p4-conference.

When Erin Colbert pictured her dream for the vacant lot near the Allentown Learning and Engagement Center in Pittsburgh, she saw a tree house, above, where children could play. A variation of the third-grader's idea became a reality with the creation of a ground-level "bird's nest" made of tree branches, right, that became a centerpiece of the Allentown Green Playce.

Photo courtesy of GTECH

COMMUNITY PLAY-CREATION

Outdoor play is good for children and teens, but it's even better when they and other members of their community participate in creating the spaces where healthy play happens. By Mark Kramer

On a cold Saturday morning in January a year ago, two dozen youth looked at an overgrown, empty lot in Pittsburgh's Allentown neighborhood and envisioned the future.

Where weeds, climbing vines and piles of debris concealed the small hillside wedged between a warehouse and the Brashear Association's Allentown Learning and Engagement Center (ALEC), the children told Amber Rooke, the organization's education coordinator at the time, that they wanted to plant flowers and vegetables. They also wanted to build a tree house, pizzeria and roller coaster.

The youth presented their ideas in the form of drawings to Ian Brown of GTECH—Growth Through Technology + Community Health—an agency that transforms vacant lots (Pittsburgh has more than 27,000 of them) into useful community spaces, including play areas called Green Playces. Mr. Brown later gave the children a menu of options from their suggestions to vote on, and they decided to install a rain garden and plant vegetable garden beds, to complement another vegetable garden created the previous summer.

They also made compromises: Since the lot did not have a sizable tree for a tree house, a large, ground-level "bird's nest" made of tree branches would provide a nook for reading and quiet time. The pizzeria became a round garden bed with pizza-slice–shaped dividers and vegetables that could serve as ingredients for a healthy pizza, such as peppers, tomatoes, basil and onion. And a new slide would create the whoosh of a coaster.

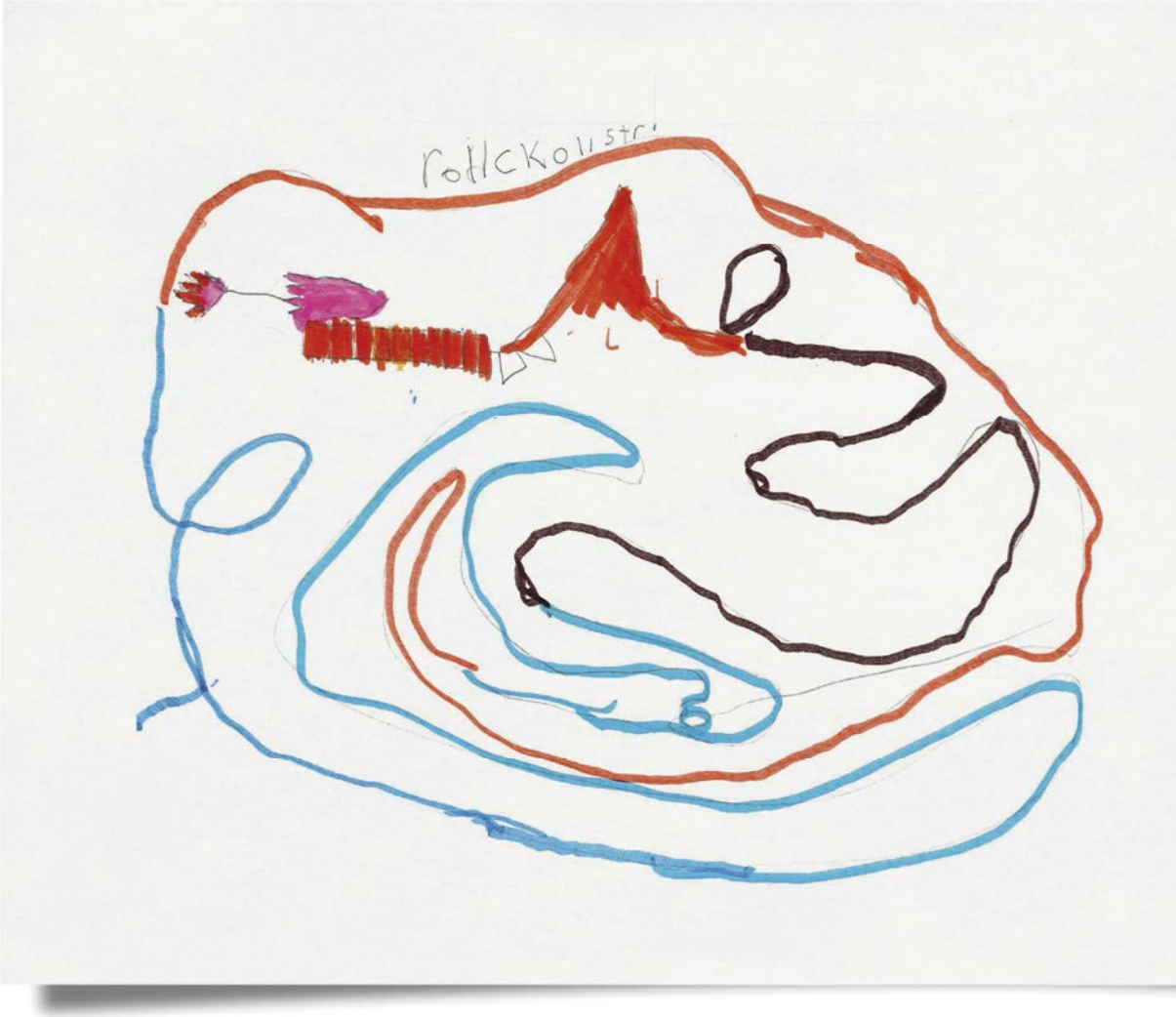
A few miles away in the neighborhood of Hazelwood, residents last year discussed possible sites for a KaBOOM! playground, which would be built on a vacant lot in an area where many children had no place to play. The national nonprofit focuses on creating environmentally safe play areas, particularly in communities with limited resources.

Hazelwood parents wanted structures that enabled 2- to 5-year-olds to take safe risks. Teenagers pointed out that playgrounds are not usually designed with them in mind. Everyone's input led to a matrix of climbing bars, a netting of taught ropes, and small pods known as Cozy Cocoons that provide young children with secret nooks where they can take a break from the noises around them, or just sit and imagine.

"Play is essential to building resilience to chronic stress," said Cara Camanillo, co-founder of the Pittsburgh Play Collaborative and executive director of the Pittsburgh Association of the Education of Young Children (PAEYC). "Kids are in this environment of constant state of stress, and poverty, family challenges. Play is an outlet to take that break from stress. But we often do the opposite with children. We eliminate things that kids need to blow off the stress."

It is no secret that children today have fewer opportunities for play, and, in under-resourced neighborhoods, adequate play spaces are increasingly rare. GTECH and KaBOOM! are creating innovative, environmentally healthy play areas for youth across Pittsburgh and Allegheny County through planning processes that have led to deeper engagement with community members, including children.

Mark Kramer is a Pittsburgh-based freelance writer. His last articles in *h* ran in the magazine's 2013 special issue on urban education. One was a personal perspective of his experience as a Pittsburgh Public Schools parent navigating the district's reform efforts, and the other was a profile of then–city schools Superintendent Linda Lane.



Third-grader Jaymair Bundridge's imagination soared when he was asked to draw what he wanted to see in a vacant lot in Pittsburgh's Allentown neighborhood. His vision for a "rollckolistr," or roller coaster, was reinterpreted in the property's Green Playces redesign as a slide.

Research has found a correlation between under-resourced communities and a deficiency in access to green space. And a 2014 Heinz Endowments–funded study by GTECH discovered a correlation between communities with high rates of vacant or blighted land and a lack of environmentally focused educational activities. This means that if you are a kid living in a blighted, low-income neighborhood, the chances of you having safe space where you can play and encounter nature are pretty slim.

KaBOOM! Senior Manager Brendan Bailes also contends that play, in general, is disappearing.

"Recess time is being cut. Kids are getting less time to be kids. Screen time is skyrocketing. Obesity has tripled. One in three kids is overweight," he said. "These kinds of consequences are devastating when kids don't play, especially in neighborhoods where kids don't have access to parks and playgrounds."

> "Not only do we get ideas from the children, the community gets buy-in from children and the young people for making this a custom space for them. They are really tapping into the neighborhood assets on a number of different levels."
>
> **Erica Liberman**, associate director of account management, KaBOOM!

This dearth of play space is one reason the Pittsburgh Play Collaborative formed a few years ago. As a consortium of museums, civic programs, and outdoor organizations, the collaborative encourages parents and other decision-makers to make play more accessible.

The Heinz Endowments responded by awarding a two-year, $200,000 grant to enable GTECH to establish six Green Playces, innovative green spaces for environmental education and play, in neighborhoods such as Allentown and the North Side and municipalities such as Wilkinsburg and McKeesport. The foundation also gave KaBOOM! a two-year, $800,000 grant to build 10 playgrounds in the "play deserts" of communities such as Hazelwood and Homewood and the City of Duquesne. The current support also is designed to catalyze corporate sponsorship of an additional 10 playgrounds.

Wayne Jones, director of organizational learning and development for The Endowments, said both the local GTECH and KaBOOM! projects began with teens in the Endowments' Summer Youth Philanthropy Program, which employs recent high school graduates to research issues and recommend grant awards. In 2010, a cohort of interns examined issues of sustainability; one group focused on playgrounds and parks in particular. They pointed out that they had grown up in neighborhoods without green spaces or where parks and play structures were in disrepair.

"They didn't feel safe going to playgrounds," said Mr. Jones, who oversaw the youth philanthropy initiative for more than a decade

GTECH created a Green Playce in Pittsburgh's Allentown neighborhood as children in the community participated in a variety of environmental education activities. Above left, students used neighborhood models to learn about how water flows on porous and non-porous surfaces. Above right, third-grader Raymair Bundridge, standing, presented his ideas for the Allentown Green Playce to other students while Amber Rooke, former education coordinator for the Brashear Association, knelt beside him.

as a program officer. "They weren't maintained, had people hanging out doing things that you didn't want young kids to be around. So that got our attention."

This led to discussions with GTECH around play spaces. Meanwhile, a youth philanthropy alumnus working at KaBOOM! helped facilitate that partnership. Mr. Jones highlighted these programs as effectively holistic and innovative, "designed by members of the community, and particularly youth, whose voices are often left out when communities talk about change."

Michelle Figlar, the Endowments' vice president of Learning, described the projects as, in their own unique ways, leading to healthier outcomes for children and youth. They also address the Endowments' three priority areas—Creativity, Sustainability and, maybe especially, Learning.

"We know through research that children learn through their play, and the most important thing we can give them is opportunities to move, to problem solve, to jump, to figure out how to go from point A to point B, and to be safe," said Ms. Figlar, noting that children are learning all the time, with every activity, but particularly through play. "Being out in that green space [through these projects] and experiencing nature . . . Both of these investments are about active learning."

In Allentown, partnering agencies, including the Hilltop Alliance, YMCA and Venture Outdoors, helped the Brashear Association consider broader community use of the neighboring empty lot, keeping safety and upkeep in mind. As an established youth program with vacant land in close proximity, ALEC was a perfect match for GTECH's Green Playces program.

By May, volunteers were clearing the lot, constructing a mulch walkway to the nest, and installing pipes and gravel to prevent storm water runoff. The children no longer had to walk 20 minutes to a green space, and Ms. Rooke, who recently started an interior design business with her husband, was able during her last few months with the organization to integrate more play into daily activities and lessons on nature. She found that just a few minutes of concentrated time touching leaves, digging into soil, and even the chore of weeding, can help a child feel better.

GTECH then installed frames to hang kids' artwork outside and provided a projector and screen so neighbors could gather for movie nights, which included documentaries on healthy food. As at other Green Playces, Allegheny Partners for Out of School Time (APOST) provided an environmental education curriculum. ALEC staff and volunteers will now maintain the space, though GTECH is available to provide technical assistance.

"I really appreciate how GTECH made it very youth-centered, and celebrated youth voices, in all aspects of this project," said Ms. Rooke. "This was one of those dreams that I had, and GTECH was able to make it happen for us."

Over the last 20 years, KaBOOM! has built or improved more than 16,000 playgrounds nationwide, including several in Pittsburgh. A robust community process drives each of these playground builds. During a design day, children, parents, other residents and partnering agencies discuss their ideas. They can hand-select pieces of equipment, weigh in on customizing a park to meet specific needs, such as providing swings for children in wheelchairs, and discuss amenities such as picnic tables or rain gardens.

"Not only do we get ideas from the children, the community gets buy-in from children and the young people for making this a custom space for them," said KaBOOM! Associate Director of Account Management Erica Liberman. "They are really tapping into the neighborhood assets on a number of different levels."

Renee Rosenstiel

Teamwork was on full display as local community members built a KaBOOM! playground in Pittsburgh's Hazelwood neighborhood. In many cases, setting up the equipment, like these climbing bars with rope netting, is as much fun for the adults as the final product will be for children.

Over a period of eight to 12 weeks, volunteer committees plan every aspect of creating the playground, from recruiting more participants to planning for t-shirts and food on the build day, during which some 200 volunteers will install the playground in a matter of hours.

"Those committees are doing work to get the word out and solicit deliverables that are needed for the project," Ms. Liberman said. "[They're asking,] 'Who is going to knock on these doors? And who's going to solicit from this restaurant? And who's going to ask this construction company for tools?' " Residents and local partnering agencies are also responsible for raising $8,500 toward the playground.

"They talk about it as more of a community- building exercise than a playground-building exercise," added the Endowments' Jones. "And I think there's truth to that."

In Hazelwood, Sonya Tilghman, executive director of the Hazelwood Initiative (HI), said one of her organization's goals is to ensure that people who live in the community have opportunities to stay and engage with its development. HI worked with residents through the Greater Hazelwood Community Collaborative over a

period of more than two years to secure the lots from the city. As with other KaBOOM! builds, Hazelwood residents collaborated with local nonprofits—including PAEYC, which has offices in Hazelwood—to navigate each step in the process. HI and PAEYC have continued work on that neighborhood's KaBOOM! site, grading and seeding soil and installing trash cans. A resident does a sweep of the park each day to clear garbage and check the play structures.

"We're not just empowering communities. This is community-driven," said Ms. Figlar, who previously served as PAEYC's executive director and also grew up in Hazelwood. "We're here to help facilitate and be a catalyst, and provide resources. But really it's about 'What does the community want?' "

PAEYC's Camanillo pointed out that Hazelwood residents wanted the typical slides, swings and monkey bars, "those typical movement experiences that you have with a typical playground, but they were also really looking for something outside of the box."

Ms. Liberman, of KaBOOM!, described the other equipment, such as the climbing bars and rope netting, as intentionally "open-ended, inclusive, and challenging to kids of all abilities and all ages, and welcoming to everyone who comes to play there. It's a whole variety of non-prescriptive ways to play."

Meanwhile, the playground is just one part of a developing play trail that will wind throughout Hazelwood and include opportunities for play along the way, from rocks for climbing and more green space to play opportunities at a gazebo or the local senior center. "Play should really be dispersed throughout a community, and a play trail is a way to link seemingly disparate parts of a community," Ms. Camanillo said.

As community members, city planners, nonprofits and others, including the Endowments, advance projects in Hazelwood, play has become a priority when considering neighborhood improvement projects.

"I think that's innovative economic development: Children aren't an afterthought in the plan," said Ms. Figlar. In fact, KaBOOM! is working with cities nationwide to integrate into urban landscapes simple means for "play along the way"—engaging children while waiting at a bus stop or as parents run errands at the dry cleaners or grocery store.

In a similar vein, Tracey Armant, program associate at the Grable Foundation, both a supporter of GTECH's Green Playces and a member of the Play Collaborative, pointed out that play can stimulate creativity in a variety of areas.

> We're not just empowering communities. This is community-driven. We're here to help facilitate and be a catalyst, and provide resources. But really it's about, 'What does the community want?' "
>
> **Michelle Figlar**, vice president of Learning, The Heinz Endowments

"Having a playful mind, a playful spirit, is the way that we get to innovation. When we play with ideas, we come up with new and unique and novel ideas," she said, adding that she appreciates how Green Playces help kids make connections between a healthier environment and personal health and success. "Somehow in this playful environment we start to rethink and reinvent. We become a little bit unconventional in the way we see the world. And that translates to other parts of our lives."

At GTECH, that reinvention means building with reused materials, from rocks and sticks that once littered an empty lot to sourcing materials at a reuse store. At ALEC, yellow plastic piping became the slide. At other sites, utility line spools have become tables. Additionally, the process of designing and contributing to these spaces also teaches kids life skills, and about construction, landscaping and natural systems.

For GTECH's executive director, Andrew Butcher, it's the process that goes into creating Green Playces that forms relationships, which in turn lead to innovation and change. "We're creating a platform to bring together some unlikely partnerships," he said. "We see people coming together who wouldn't otherwise be coming together, implementing projects. That's what forges resilience in a neighborhood." h

here&there

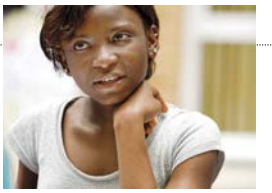
URBAN ATTRACTION

Pittsburgh's progress in its ongoing transformation into a premier medical research and high-tech hub attracted two major national conferences to the city in the fall. In October, hundreds of scientists and researchers joined then-President Barack Obama for the White House–organized Frontiers Conference at Carnegie Mellon University and the University of Pittsburgh. The gathering, which received support from several local foundations, including the Endowments, focused on "frontiers" deemed critical for social and economic advancement in the nation that Pittsburgh already has been advancing, such as medical innovations, computer technology and Smart Cities sustainable development. In November, the National League of Cities, a Washington, D.C.–based advocacy group, met in Pittsburgh for its annual summit. More than 3,000 representatives from cities across the country attended the event, which included site visits to city neighborhoods and the Downtown Cultural District, with particular attention paid to the city's revitalized riverfronts.

Official White House Photo by Pete Souza

FAREWELL TO THE CHIEF

Cameron McLay, who came to Pittsburgh two years ago with a reform agenda for the city's police department, stepped down as chief in November. During the public announcement of his departure, he said that he believed he had done everything he could in the position, such as improve police accountability, data-driven policing and community relations. He also made inroads in upgrading police leadership training with help from a $100,000 Heinz Endowments grant to his department. Mr. McLay returned to Wisconsin where his family lives without definite plans for his next career move. He has been replaced by Scott Schubert, a 23-year veteran of the force who has vowed continue Mr. McLay's reform efforts.



STATE OF THE GIRLS

A summary of a State of the Girls Report was released last fall during the first Equity Summit convened by Gwen's Girls, a nonprofit after-school and support program for girls founded by the late Gwendolyn Elliot, Pittsburgh's first African American female police commander. The overview provided a snapshot of some of the study's findings, which showed African American girls experiencing significantly more personal challenges than their white counterparts. Among them were that black girls in the City of Pittsburgh are more than three times as likely as white girls to be suspended from school. In Allegheny County, African American girls are 11 times more likely to be referred to juvenile court than their white peers, while, nationally, black girls are three times as likely as white girls to be referred to juvenile court. The study was funded by The Heinz Endowments and the FISA Foundation.

KUDOS

Several Heinz Endowments staff members recently received promotions in recognition of the expanded roles that they will be playing at the foundation. Michele Sullenger has moved from manager of accounting and financial reporting to foundation controller. Wayne Jones, formerly the Endowments' senior impact officer, is now director of organizational learning and development. And Carmen Anderson has been promoted from senior Children, Youth & Families program officer to director of Equity and Social Justice.

Ms. Anderson also was honored in the fall for her community and social justice work. The nonprofit Gwen's Girls recognized her and three others during its Equity Summit, which was presented by the Gwendolyn Elliot Institute and the University of Pittsburgh. In addition, Ms. Anderson was one of 25 women celebrated for their contributions to the region by the Onyx Women's Networks during its 25th-anniversary event.

For daily updates on programs and issues that The Heinz Endowments supports, follow us on social media.

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COOL SPACES

Perking Up the Neighborhood

Efforts to revitalize Pittsburgh's Homewood neighborhood received a boost in November with the opening of Everyday Café. The coffee shop provides a community meeting space with free internet service as well as hot and cold beverages, sandwiches, soups and salads. Owned and operated by the nearby Bible Center Church, the project has received support from the Endowments, the Richard King Mellon Foundation, Bridgeway Capital and the church congregation. And there's no "paper or plastic" option at the shop. The cafe only accepts debit and credit cards or payment through an online service.

Certified Sustainable

Millvale recently became Pennsylvania's fourth municipality and the first at the borough level to receive "platinum certification"—the highest achievement—from the Sustainable Pennsylvania Community Certification program. It was recognized for having multiple policies and practices regarded as defining a sustainable community. These included creating shared roadways for bicycles; promoting community engagement; advancing equity and inclusion; and demonstrating significant achievements in environmental stewardship in areas such as land and energy use, conservation and green construction. The borough also maintains a community garden while the Sisters of St. Francis of the Neumann Communities' Mount Alvernia campus in Millvale has plant-filled bioswales, shown below, that reduce storm-water runoff. The Heinz Endowments has supported Millvale's sustainability efforts through providing funding for community improvements that have included installing solar panels atop the library, building a greenhouse, securing strategic property to develop a food hub–based town square, and building an incubator for food entrepreneurs.

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PLAYING WITH IDEAS | PAGE 28

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