



RUDY
BRUNER
AWARD
FOR URBAN EXCELLENCE

2017
SILVER
MEDALIST

La Kretz Innovation Campus + Arts District Park

Los Angeles, California

Cleantech incubator, public utility sustainable energy education center, and neighborhood park

Investing in Urban Infrastructure

The 2017 Rudy Bruner Award for Urban Excellence



**RUDY
BRUNER
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FOR URBAN EXCELLENCE

BRUNER FOUNDATION, INC.

Jay Farbstein, PhD, FAIA
Anne-Marie Lubenau, FAIA
Danya Sherman
Robert Shibley, FAIA, FAICP
Richard Wener, PhD

Edited by Elizabeth Chesla, MA

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130 Prospect Street
Cambridge, MA 02139
www.brunerfoundation.org

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Benny Chan/Fotoworks

Overview

Submitted by: John Friedman Alice Kimm Architects
Completed: 2016
Total Development Cost: \$50.2 million

The La Kretz Innovation Campus (LKIC) and Arts District Park is a cleantech incubator and education center alongside a new neighborhood park east of downtown Los Angeles. Completed in 2016, the \$50.2 million project is the product of an unusual public-private collaboration between city agencies, a consortium of local research universities and businesses, and the Los Angeles Department of Water and Power (LADWP)—the project’s lead developer and the largest publicly-owned utility in the country. Funding was provided by numerous public and private sources including federal Community Development Block Grants and New Market Tax Credits, LADWP, and philanthropist Morton La Kretz.

Located in the vibrant downtown Arts District within the city’s proposed Cleantech Corridor, LKIC is part of a broader vision to promote innovation, technology, and a culture of sustainability along with reinvestment, job creation, and workforce development. Designed by John Friedman Alice Kimm Architects (designers of 2007 RBA Silver Medalist LA Design

The open and inviting warehouse space in La Kretz Innovation Campus (opposite) fosters creativity and collaboration.

“LA KRETZ INNOVATION CAMPUS + ARTS DISTRICT PARK IS AN INNOVATIVE WAY FOR A CITY TO PARTICIPATE IN ECONOMIC DEVELOPMENT.”

– 2017 Selection Committee

Center), the three-acre project is intended to foster creativity and a sense of community among tenants and to be a catalyst for the development of cleantech industries in the neighborhood. The sustainable development (LEED Platinum certification pending) is a 61,000-square-foot renovated warehouse incorporating state-of-the-art technologies such as a 175-kilowatt photovoltaic solar canopy and fast-charging electric vehicle stations in the parking lot, a microgrid power system, bio-swales, and the city's first public grey water filtration and recycling system.

The adjacent half-acre Arts District Park—the first public park in the neighborhood—is a green oasis created in partnership with the architects, community, and the City of Los Angeles. Used by LKIC workers and local residents, it offers sitting areas, a children's playground, and a shade structure for gatherings and performances.

The building houses three complementary components: the Los Angeles Cleantech Incubator (LACI), LACI's Advanced Prototyping Center, and LADWP's Customer Engagement and Sustainable Living Labs. LACI, the anchor tenant, is a nonprofit business hub that provides flexible and affordable work spaces along with coaching, mentoring, and access to professional networks and sources of capital for cleantech start-up companies developing products or services that advance sustainable and efficient use of resources.

Since its launch in 2011, LACI has nurtured and advanced well over 50 companies that, in turn, have raised over \$200 million in private investment and created more than 1,200 local jobs. LADWP's Customer Engagement and Sustainable Living Labs feature hands-on educational exhibits illustrating innovative energy- and resource-saving products. The Advanced Prototyping Center supports the development of new technologies and

products by incubator tenants and local businesses, providing tools such as 3-D printing, laser cutting, electronics, robotics, and chemistry labs as well as technical support.

The open and inviting warehouse interior incorporates the original building's exposed brick walls and wood bowstring trusses along with new skylights, solar tubes, faceted walls, glass partitions, and artwork. A network of interior streets connects flexible, open workspaces, meeting rooms, and gathering areas that encourage interaction and collaboration. LACI offers weekly educational tours and provides event spaces free of charge to the local community as well as paid public memberships to the prototyping center.

LKIC is one of several major public investments in the city's Arts District area, including the new downtown regional connector subway and its Little Tokyo/Arts District Station, the Los Angeles River Revitalization, and the Sixth Street Bridge Viaduct Replacement Project. Together, they are redefining the identity of Los Angeles.

As Kelli Bernard, former LADWP director of economic development and deputy mayor for economic development under Eric Garcetti observed, LKIC “is more than a building; it is home to a community of innovators, community leaders, entrepreneurs, nonprofits, and more. It has become a space of creativity and invention.”

La Kretz

Innovation Campus

The Future Begins Here.

WELCOME

WELCOME TO THE FUTURE OF WATER



Project at a Glance

- A cleantech incubator and demonstration facility intended to promote the city's green economy.
- A 61,000-square-foot renovated warehouse complex incorporating state-of-the-art green building technology and housing three synergistic components:
 - **Los Angeles Cleantech Incubator**, a nonprofit business hub that provides work space, coaching, mentoring, and access to professional networks and sources of capital for cleantech start-up companies.
 - **LADWP's Customer Engagement and Sustainable Living Labs**, featuring educational and interactive exhibits illustrating innovative, energy-saving products.
 - **The Advanced Prototyping Center**, supporting the development and testing of new products by incubator tenants and other subscribers.
- Located in the vibrant downtown Arts District, an area being reclaimed from mostly derelict or underutilized industrial buildings.
- The adjacent Arts District Park, which brings much-needed green space to the District.

Project Goals

- Support job creation, workforce development, and reinvestment in downtown Los Angeles.
- Advance the city wide mandate to move toward sustainability by incubating cleantech companies and encouraging innovation in cleantech and related sectors.
- Help small businesses and entrepreneurs build profitable ventures that contribute to the local economy.
- Promote cultural and urban preservation and revitalization of the downtown Arts District.
- Incorporate community and stakeholder participation.

Chronology

1781

A group of families from Mexico establishes a settlement that becomes known as Los Angeles.

1800

1876-1905

Los Angeles evolves into a transportation center as the western terminus of three major transcontinental railroads.

1900

1950s-1960s

Manufacturing plants move to outlying areas, leading to vacancy and blight.

1994

The City of Los Angeles formally designates the area as the "Arts District."

2000

2009

LADWP general manager and Mayor Villaraigosa sign the Cleantech LA Memorandum of Understanding.

Villaraigosa recommends reprioritization of LADWP resources and capabilities to encourage economic development through investment in clean technology.

1850

Los Angeles is incorporated as a municipality.

1880s-1920s

The area between downtown and the rail yards develops as a manufacturing and warehousing zone.

1970s

Artists begin to move in and rehabilitate former warehouses.

2008

Mayor Antonio Villaraigosa launches Solar LA, committing the Los Angeles Department of Water and Power (LADWP) to the development of 1.3 gigawatts of solar energy by 2020.

2010

The Los Angeles City Council authorizes up to \$3 million in Community Development Block Grant (CDBG) funds to support the development of what becomes known as La Kretz Innovation Campus (LKIC) + Arts District Park (together, La Kretz).

LADWP Board authorizes the first steps in the creation of LKIC, including acquisition of the site and hiring of John Friedman Alice Kimm Architects (JFAK).

JFAK facilitates five community meetings to gather input to inform the design of the park.

2012

FEBRUARY: Governor Jerry Brown disbands CRAs statewide. LADWP and the City of Los Angeles step in to take over its functions (leadership and funding).

MARCH: City approves \$850,000 in CDBG funds to support the development of LKIC.

OCTOBER: LACI receives a \$250,000 challenge grant from the Broad Foundation.

DECEMBER: LADWP moves forward with funding, design, and construction.

2014

Contracts are modified to complete design and build-out of LADWP's Customer Engagement Center.

2016

LADWP opens its Customer Engagement and Sustainable Living Labs in April, and the official grand opening for the La Kretz campus is held in October, with the Arts District Park opening later that month.

2011

The Community Redevelopment Agency (CRA) of the City of Los Angeles approves \$1 million to assist with the implementation of the incubator business plan.

Los Angeles Cleantech Incubator (LACI) opens a temporary facility one block from the new site.

The consulting firm BCD releases an Economic Impact Report for La Kretz, projecting substantial positive economic impact on jobs and revenue.

2013

MAY: LADWP approves accessing New Market Tax Credits and construction begins in June.

AUGUST: LADWP leases the property to LKIC.

2015

AUGUST: LADWP approves lease and management agreement with LACI for the campus.

NOVEMBER: LACI moves into its offices. Vice President Joe Biden visits campus and leads a roundtable on cleantech development.



Project Description

INTRODUCTION

La Kretz Innovation Campus (LKIC) and Arts District Park (together, “La Kretz”) brings a cleantech incubator and education center and a much-needed neighborhood park to the east of downtown Los Angeles. The Los Angeles Department of Water and Power (LADWP), the largest publicly-owned utility in the country, led a public-private collaboration of city agencies and a consortium of local research universities and businesses in the development of the \$50.2 million project. Rooted in the city’s vision of positioning itself as a leader in sustainability, La Kretz supports cleantech start-ups and sustainable living education in a highly collaborative and interactive campus set in a renovated Arts District warehouse.

CONTEXT

Los Angeles

Founded in 1781 by a group of families from Mexico, Los Angeles was incorporated in 1850. By the turn of the twentieth century, transcontinental railroads connected Los Angeles to the rest of the country, allowing the city to become a center of manufacturing for aerospace, garment, and many other industries. The temperate climate attracted the movie industry, which could shoot films year-round. Warehouses and factories were concentrated near the railroad yards, which were located east of downtown. By the 1960s, as industries moved out of the original core, the manufacturing district fell into serious decline.

- POINTS OF INTEREST**
1. La Kretz Innovation Campus
 2. Barker Block Lofts
 3. One Santa Fe
 4. Southern California Institute of Architecture
 5. Little Tokyo/Arts District Station
 6. Sixth Street Bridge Reconstruction
 7. Boyle Heights

LOS ANGELES, CA

Today, Los Angeles is a major metropolitan area. The city has grown to a population of almost four million in a metropolitan statistical area of over 13 million. The city is “majority minority”—just under half of its population is Latino, just over 10% is Asian, and just under 10% is Black. Almost 40% are foreign-born, most of them from Latin America with another large group from Asia and sizable populations from many other regions of the world. Households in the city are poorer than in Los Angeles County or the rest of California, with over 20% living below the poverty line. A 2017 report from UCLA’s Anderson School of Business found that LA is the nation’s most unaffordable housing market, and many households spend more than half of their income on rent.

The Los Angeles region has the largest manufacturing base (measured by number of jobs) in the country. Major sectors include transportation equipment, apparel, fabricated metal products, computers, and electronics. In terms of its architectural legacy, Los Angeles attracted or elevated many important practitioners of early and mid-century modern design, such as Charles and Ray Eames, A. Quincy Jones, Pierre Koenig, and John Lautner and features contemporary projects by nationally and internationally recognized architects. Frank Gehry, probably the most noted American architect, is based in Los Angeles.

The Arts District

Just east of downtown, the Arts District is bordered by Little Tokyo to the north, Skid Row to the west, railroad tracks and the Los Angeles River farther to the east, and a newer manufacturing district to the south. The area is dense, with a higher floor-area ratio than would generally be allowed today and consists of a mix of industrial buildings ranging from one- to two-stories to over six stories in height.

In 1980, following the takeover of a number of derelict industrial and warehouse buildings by artists in the 1970s, and in order to legalize these ad-hoc and often unsafe residences, the City of Los Angeles created an “Artist in Residence” zoning ordinance. In 1994, following submission of a petition by a local community leader, the city officially designated the area as the Arts District. In 1999, under the leadership of Mayor Antonio

Villaraigosa, the city passed its Adaptive Reuse Ordinance, which relaxed zoning codes for the conversion of pre-1974 commercial and industrial buildings into residential uses for non-artists. This spurred another significant wave of development in the Arts District and shone a spotlight on the neighborhood as a creative and unique place to live. Booming now and attracting many residents who want to live near downtown, the district has seen very substantial development.

Along with the Arts District, and as a key part of his plan for economic development and job creation, Mayor Villaraigosa wished to encourage a rebirth and repositioning of manufacturing, emphasizing clean and green technologies. Several initiatives were being developed, one of which was to create a “Cleantech Corridor.” Given its proximity to downtown, with major financial institutions that could be of assistance to start-ups and its stock of obsolete warehouses and manufacturing buildings, the southerly portion of the Arts District was identified as a promising location to include in the Cleantech Corridor, which would extend to the north and south of the district. An actual corridor has not materialized physically (though LACI still refers to itself as being part of it), but the cleantech industry and Arts District are thriving.

Arts District Park, connected to the Innovation Campus, provides much-needed open space in this area, which previously lacked a park. Immediately across the street from the park to the north is Urth Caffé, a local fixture that draws many people to the district. Some choose to take their food to the park to eat.

Like artists in many other cities such as Saint Paul, Minnesota and New York City, Los Angeles’ artists were drawn to the large spaces and cheap rents of the underutilized warehouses east of downtown. Many have painted large-scale murals on the sides of buildings, which contributes substantially to the creative atmosphere. Like artists in other cities, LA’s artists were pioneers who soon drew galleries, restaurants, and more middle-class residents to the district. Another pioneer was the Southern California Institute of Architecture (SCI-Arc), which renovated a very long warehouse opposite the rail yards. Developers quickly took an interest

and have followed suit with major projects, including a large mixed-use complex with 438 apartments known as One Santa Fe on the old rail yards across from SCI-Arc designed by Michael Maltzan Architecture (architect of 2009 RBA Gold Medalist Inner City Arts, located less than a mile away from La Kretz). Immediately across the street from LKIC is a large adaptive reuse condo project called the Barker Block, and there are many others, both built and planned. Most of the early projects entailed adaptive reuse of multi-story industrial and warehouse buildings into lofts, including the National Biscuit Company lofts, which features Church and State, one of the first of many high-end restaurants in the area, on the ground floor.

While the recession that started in 2008 slowed things down for several years, development has recently accelerated, with some major private mixed-use developments in the pipeline. Perhaps indicative of where the Arts District appears to be headed is a proposal for a 2.8 million-square-foot project called 6AM, designed by the Swiss architects Herzog and de Muron and developed by a group affiliated with Michael Dell. This project, which includes two 700+ foot mixed-use towers, is unlike anything else in this low-to-mid-rise area and is only a couple of blocks south of LKIC. The first of three phases is planned to start in 2018 with final completion anticipated by 2035. If it materializes, the significant scale of the project would change the face of the Arts District.

To complement these private developments, the city is in the process of replacing the Sixth Street Bridge, a very long viaduct over the main railroad tracks and the Los Angeles River, with a new bridge also designed by Maltzan. Under construction in early 2017, the project area starts about two blocks from La Kretz and extends toward the east all the way to Boyle Heights, with a variety of open space amenities and facilities. The Los Angeles River, long a neglected and concrete-lined drainage channel, is now being reclaimed and naturalized and is the subject of a master plan being prepared by Frank Gehry, who is building on the work of other design teams including one led by Mia Lehrer (2015 RBA Selection Committee member).



Former warehouses in the Arts District host artist galleries and studios, restaurants, and shops.



Larger warehouse buildings have been converted into housing like the Barker Block.

Cleantech

Most incubators focus on high-tech (using information technology to develop new apps) or standard business development. By contrast, clean technology—“cleantech”—specializes in processes, products, and services that reduce environmental impacts through energy efficiency, use of sustainable resources, reduction of waste, and environmental protection and enhancement. Examples include recycling, renewable energy, green transportation, utilizing waste products, and developing information technology apps to support these functions.

PROJECT HISTORY AND LEADERSHIP

The La Kretz Innovation Campus and Arts District Park grew out of an initiative by Mayor Antonio Villaraigosa who, in late 2008, launched Solar LA, committing LADWP to the development of 1.3 gigawatts of solar energy production by 2020. Solar LA was represented as a major opportunity to turn environmental solutions into economic opportunities for Los Angeles by investing in and stimulating the local economy. LADWP estimated that the Solar LA plan would create 200 to 400 jobs for every 10 megawatts of solar power, which could bring from 25,000 to 50,000 jobs in fields such as research and development, manufacturing, installation, maintenance, and repair.

The region’s major research and technology universities, together with leading business groups, played an important role in the development of a “cleantech-oriented” incubator. In response to the availability of state and federal funding in 2008 and 2009, and at the urging of the mayor, a coalition came together to sign the “Cleantech LA Memorandum of Understanding,” committing its support for “joint research and development, deployment, and commercialization of technologies that provide solutions to the city’s and the world’s environmental issues while creating jobs for Angelenos.” Signatories included Mayor Villaraigosa, LADWP, the University of California Los Angeles (UCLA), the University of Southern California (USC), California Institute of Technology (Caltech), the Jet Propulsion Laboratory, the Los Angeles Business Council, the Los Angeles County Economic Development Corporation, the Los Angeles Chamber of Commerce, the Central City Association, and the Community Redevelop-

ment Agency of the City of Los Angeles (CRA/LA). The memorandum included collaboration on developing the following:

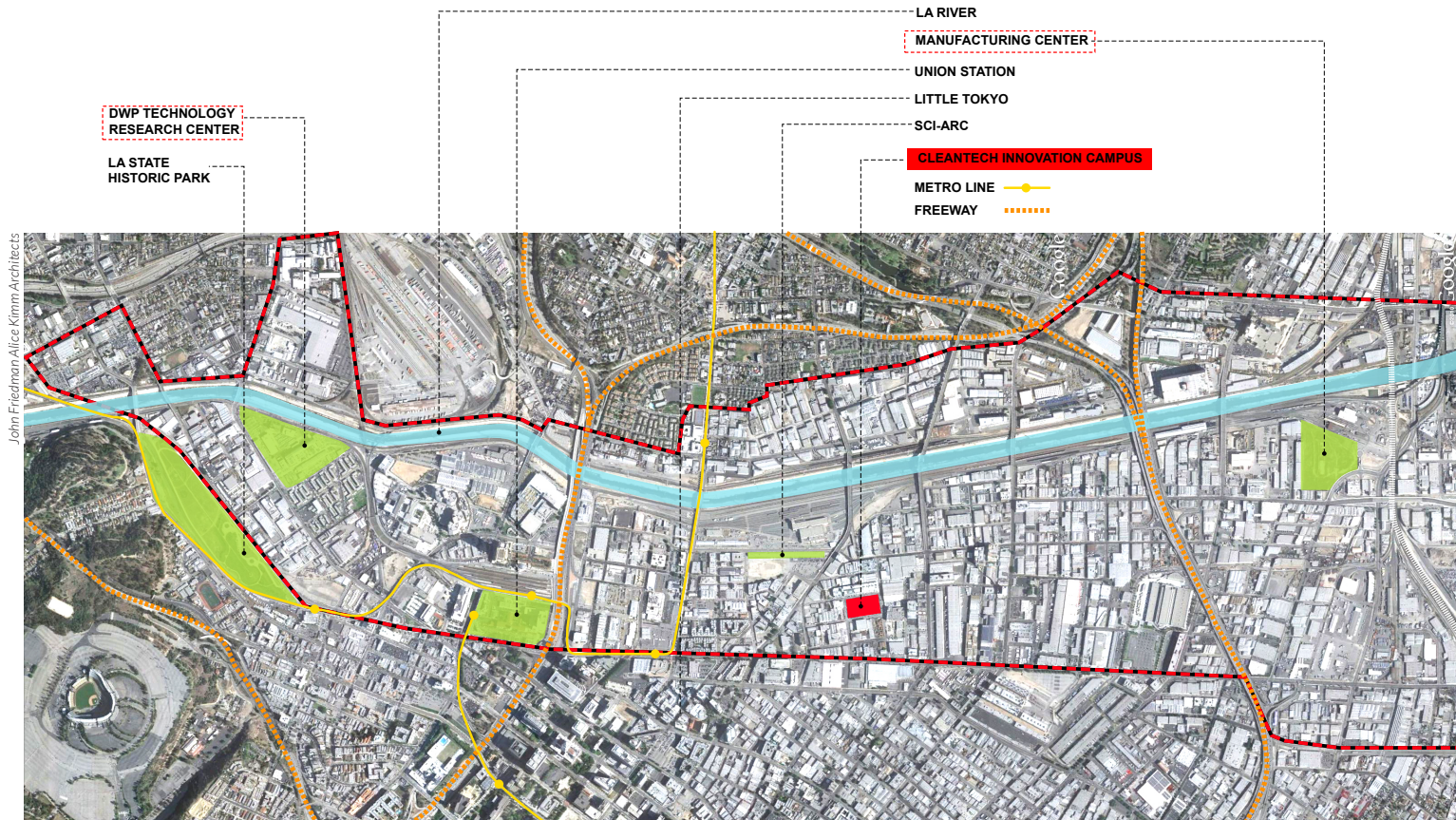
- the Los Angeles Cleantech Corridor
- the LADWP Clean Technology Research Center (now LKIC)
- basic academic science and engineering research that drives innovation and contributes to economic competitiveness through knowledge creation, higher education, and technology transfer
- applied water, energy, and climate change research, testing, and deployment.

The coalition, led by LADWP, obtained a grant of \$120 million from the US Department of Energy for smart grid development, and though funding came and went, the coalition stayed together and contributed to the development of LKIC, which members saw as both a vehicle to accelerate the commercialization of their research ideas and a source of jobs for the region.

Later in 2009, Mayor Villaraigosa recommended reprioritization of LADWP resources and capabilities to encourage economic development through investment in clean technology. LADWP’s board approved economic development strategies to allow:

- a low-interest loan fund for small business expansion;
- additional staff to help attract businesses to LA to create green jobs for products LADWP requires;
- preference for local manufacturers of solar panels and other cleantech products purchased by LADWP;
- determination of LADWP’s research and development needs with the notion of using the utility’s demonstrations, platform, and purchasing power to attract businesses to LA; and
- support for the creation of LADWP’s Clean Technology Development Center (now LKIC) as the initial step in launching the Cleantech Corridor.

Over the course of 2010, several steps moved the project forward. LADWP acquired the site for the campus, and the CRA/LA, in charge of project management, hired John Friedman Alice Kimm Architects (JFAK) to develop the design. In addition, the mayor and city council authorized up to



La Kretz Innovation Campus (LKIC) and Arts District Park are part of the envisioned Los Angeles Cleantech Corridor.

\$3 million in Community Development Block Grant (CDBG) funds to pay for public and tenant improvements at LKIC. Meanwhile, LADWP's board authorized the first step in the creation of its Clean Technology Research Center. Finally, the CRA/LA released a business plan for the future Los Angeles Cleantech Incubator (LACI), which provided the basis for justifying and beginning operations.

In 2011, the CRA/LA board approved a contract for \$1 million to assist with the implementation of the LACI business plan and solicited proposals for a management team, hiring Fred Walti and Neal Anderson to run LACI. Both were entrepreneurs with extensive experience in running incubators (while Walti left in 2017, Anderson continues to serve on LACI's senior management team). Later that year, a temporary facility for LACI was leased in a former bus garage a block from the new site. The temporary quarters enabled LACI to begin incubating cleantech start-ups, years in

advance of LKIC's opening. In addition, BCD, a consulting firm, released an economic impact report for the project which showed that, by its fifth year, LACI was projected to generate 1,680 new jobs (600 direct jobs and 1,080 indirect and induced jobs), and LACI companies were projected to generate \$82.5 million in sales, thus projecting a significant contribution to city revenues via sales and business taxes and \$45 million in employee salaries.

In 2012, the project faced a crisis when the CRA/LA (and all such agencies statewide) were officially disbanded by Governor Jerry Brown in response to state budget shortfalls, and the tax increment revenues generated by CRA/LA developments, traditionally kept locally, were redirected to the state treasury. However, LADWP stepped in and took over management of the development process. Also that year, the city approved \$850,000 in CDBG funds to support the development of LKIC, and LACI received a \$250,000 challenge grant from the Broad Foundation. Toward the end of the year, the LADWP board authorized a number of steps in preparation for construction of LKIC. They included:

- an MOU between LADWP and the Department of Public Works' Bureau of Engineering for construction-related services;
- authorization to accept project funding from the US Department of Commerce Economic Development Administration, the successor agency to the CRA/LA, and Community Development Block Grants;
- authorization to seek US Treasury New Market Tax Credits; and
- an architectural services contract with JFAK.

LKIC is located in what was slated to be the city's Cleantech Corridor in Downtown LA. This corridor would have been a four-mile long strip between the Los Angeles River and Alameda Street, with LKIC and a projected Cleantech Manufacturing Center serving as cornerstone projects. The plan was to use a portfolio of local, state, and federal financing incentives to attract companies to this area. While LKIC survived the demise of the CRA/LA, the 20-acre site of the proposed Cleantech Manufacturing Center did not.

In 2013, LADWP approved the steps needed to enable access to New Market Tax Credits. To meet US Treasury regulations, LADWP leased the



Steve Andrews (left), Fred Walti (second from left) and Neal Anderson (center) were key players in LKIC's development.

property to LKIC, a city-formed nonprofit public benefit corporation. In June of that year, construction on the campus began, and the groundbreaking ceremony drew over 700 attendees. The Arts District Park, by contrast, was in limbo: a hoped-for state funding grant fell through due to the dismantling of the CRA/LA, which had sponsored the grant application for park funding. However, City Councilmember Jose Huizar, who represented the area, stepped in and secured city funds for the park, allowing it to move toward realization. LADWP, which owned the site, leased it to the city's Recreation and Parks Department, and, in 2014, a new design process was undertaken, this time under the leadership of the city's Bureau of Engineering, whose Architectural Services Division is charged with most public park design. Construction began in early 2016.

As construction on the main facility continued in 2014, the design and construction contracts were modified to reflect LADWP's decision to fit out about 15,000 square feet for its Customer Engagement Center.

In August 2015, the LADWP board approved a 20-year lease and management agreement with LACI for LKIC, with an option to extend the term for up to 10 years. LADWP agreed to charge \$1 per year for rent plus 50% of any net rental revenue over \$1,500,000. In November, LACI started moving into its offices, and LADWP finalized plans for its Customer Engagement Center, workshops and labs. Vice President Joe Biden visited the campus and led a roundtable on cleantech development.

In April of 2016, LADWP opened its renamed Customer Engagement and Sustainable Living Labs, and the official grand opening for the campus took place in October. The Arts District Park opened in November.

Leadership

Like most successful projects, La Kretz has many parties who are proud to claim authorship and many who contributed in important ways. Especially important in the early phases of the project were a number of influential individuals who had powerful ties across the city departments and agencies that needed to be engaged. These included two mayors and their staffs, the CRA/LA, and LADWP—in fact, several of the important leaders moved among these entities, partly because of the demise of the CRA/LA at a crucial moment for the project.

The City of Los Angeles and the CRA/LA

Key contributors to the early phases (2007 and 2008) included the City of Los Angeles, whose mayor at the time, Antonio Villaraigosa, with the cooperation of the city council, was committed to improving the area to the east of downtown and to using clean technology to spur economic growth. At vital junctures, the City of Los Angeles provided funding for the project. The principal city agency devoted to the urban aspects of the vision was the CRA/LA, which could condemn, acquire, and sell land and provide funding support. It was committed to the creation, and then the improvement, of the Arts District, which was targeted as the preferred location for the Cleantech Corridor, largely because, at the time, there was a significant amount of underutilized warehouse and industrial space in the area. However, the CRA/LA was disbanded at a critical time for the project. The mayor's office and city council stepped in to provide alternative inter-

mediate funding sources, and LADWP took over management and ownership of the project. Crucial support for the project continued under Mayor Eric Garcetti, who shared many of Villaraigosa's values.

It is important to note that there was a lot of coordination and fluidity among top leaders in these agencies, especially following the dissolution of CRA/LA. As top managers and executives moved among the CRA/LA, city government, and LADWP, they continued their support for the project.

For example, Sharron Gi, the CRA/LA's project manager for the central industrial area and Arts District when the project began, became a consultant to LADWP. Steve Andrews was chief of strategic planning for the CRA/LA and later moved to the mayor's office when the CRA/LA was dissolved. Both were strong supporters of LKIC, and their continued involvement was essential to the project moving forward.

LADWP

Another key player in LKIC's development and continuing operation is LADWP, the nation's largest municipal utility. John Chen served as its director of economic development from 1999 to 2008 and continued to contribute to the project after he took on other responsibilities. At LADWP, Chen was an important voice of progress in this arena, looking for initiatives that would help the agency implement forward-thinking and even out-of-the-box programs while meeting its mandates to deliver clean energy and water to its customers more efficiently and effectively. Chen played a central role in initially getting LADWP to commit to the project and later to take over management of the development process after the CRA/LA was disbanded. Kelli Bernard, formerly of Mayor Villaraigosa's office, succeeded Chen as director of economic development before becoming deputy mayor under Mayor Garcetti; she provided strong support for the project from start to finish.

Morton La Kretz

One important factor in helping Chen convince LADWP's board to go forward with the purchase of the LKIC site was a \$3 million donation that substantially lowered the effective purchase price. The donation was made

to LADWP by the La Kretz Foundation, headed by Morton La Kretz, who made his fortune in Los Angeles real estate. La Kretz was well known for supporting local environmental, clean technology, and sustainability initiatives including Tree People and helped to build and fund environmental science institutes at the California State University Los Angeles, UCLA, and the University of California at Santa Barbara. This project fit well into the foundation's mission, and it devised a unique way of funding LKIC by donating another building to LADWP, allowing it to divert other funds to this project.

The Bureau of Engineering and John Friedman Alice Kimm Architects

As the project moved toward design and construction, LADWP contracted with the city's Bureau of Engineering (BOE), part of the Department of Public Works, to manage the construction process. The BOE was responsible for hiring the design team of John Friedman Alice Kimm Architects and provided the lead designer for the park, Rick Fisher. Fisher worked closely with Alice Kimm, who initiated the concept of including the park when the firm was interviewed and whose participation was requested by the community in 2014 when the park portion finally moved forward. Laura Velkei, founder of the Arts District Community Council, helped to organize initial community involvement and generated attendance of 40 to 50 people per planning meeting. She found the process very inclusive and is satisfied that the result meets the needs expressed by the community, so much so that, when funding was threatened, she pressed the city council to step in, which it did.

LACI Managers

The other key players with a continuing role in operations are the managers of LACI: Fred Walti, its former president and CEO; Neal Anderson, its COO; and Ben Stapleton, its chief partnerships officer. This group has deep experience both as entrepreneurs in their own right and as consultants to leading incubators including Idea Lab, which is associated with Caltech, and another one associated with Stanford University. They advised the CRA/LA on identifying potential companies that might locate in the planned Cleantech Corridor, which was at that time to be anchored by a very large, vacant industrial building known as the Crown Coach Works, south of the

current site. In 2011, through a competitive process, the CRA/LA hired Walti, Anderson, and Stapleton to run the incubator, which began in leased space until LKIC was completed. In the interim, they were instrumental in working with the architects and city agencies in the design and programming of LACI.

DESIGN AND DEVELOPMENT

Site Selection

LADWP selected and acquired the site in part because it is across the street from one of its substations in the core of the Arts District. Urth Caffé, a well-known local landmark, is across the street to the north and the Barker Block lofts are to the east. Bounded by South Hewitt Street to the east, Palmetto Street to the south, and Colyton Street to the west, the site is surrounded by a mix of live/work lofts, restaurants, bars, coffee houses, and art galleries, with industrial uses still active to the west and further south.

At the time of the purchase, the site consisted of a 61,000-square-foot warehouse divided into eight separate units, plus about an acre of parking at the south end and a half-acre empty lot at the north end, which is now the Arts District Park. The warehouses were arrayed as two sets of four on either side of a demising wall; one set fronted on Hewitt Street and the other on Colyton Street. All the warehouses were constructed of masonry walls and wooden bowstring truss roofs.

At the time of acquisition, it had not been determined if the warehouses would be renovated to accommodate the new campus or if they would be demolished to make way for a new building. While the buildings were in decent shape, it was a question of weighing costs and benefits that could only be determined following design studies and cost estimates.

Architect Selection

Later in 2010, the CRA/LA issued a request for qualifications to pre-qualified design firms, interviewing three teams in December. The client interview panel consisted of representatives of the key agencies, including the CRA/LA, LADWP, and the city as well as industry experts. The firms were invited



The Los Angeles Clean Tech Incubator (LACI) opened in 2011 in a temporary facility.



Image: John Friedman Alice Kimm Architects. Illustration: John Friedman

A 3.5-acre site with a one-story brick and wood warehouse was purchased for a permanent campus.

to present their qualifications and ideas about how they might approach the project, including their vision of the opportunities it presented. JFAK showed three options that they had to largely invent, since they were not provided with a detailed program by the client, in part because the group that would later manage LACI had not yet been selected. All three options included a park; JFAK recognized the need for the open space since its offices are in the Arts District. One option proposed a new three-story building for the cleantech functions and converted the warehouses into retail space, which would generate revenue. A second option used the warehouses for LKIC, introducing courtyards and a pedestrian street through the middle of the complex with utilities running under it that lab space could plug into. This option was reported to have garnered a lot of interest from the interviewers. Option three was more integrated with the park, this time featuring an outdoor “street” running from south to north all the way through the center of the building. JFAK did not recommend any of the options, rather using them to illustrate their design process with the intent of stimulating the interest of the interviewers. This appears to have been an effective strategy, since JFAK was selected over very strong competition.

Program

In 2011, after Fred Walti and Neal Anderson were on board, JFAK worked with LACI management to develop the building program. The approach entailed simultaneously developing the program and floor plans, which evolved as the team thought through what was needed to support operations for the foreseeable future. While the plan started with a preponderance of enclosed offices, it evolved away from that toward mainly open workstations with some lockable offices to allow tenants to protect intellectual property. Meeting and training facilities were then added. Goals that guided the incubator design were based on the factors believed to support start-up success and clean technology:

- flexibility
- interactive space to catalyze creativity
- space for learning
- sustainability
- “clever but affordable design.”

Looking back, Walti expressed both satisfaction and a degree of surprise at how well LACI was able to target its needs and how well the resulting design supports its mission and operations.

The requirements for the Advanced Prototyping Center and the LADWP Customer Engagement and Sustainable Living Labs were developed later. For the time being, space was reserved for them on the west side of the building to enable access from Colyton Street, which offered better loading conditions. The approximate initial allocation of the overall space is 50% LACI, 25% LADWP Customer Engagement and Sustainable Living Labs, and 25% Advanced Prototyping Center. Later in 2011, LADWP assigned Terry Brungard, manager for renewable resources and emerging technologies in its Efficiency Solutions Engineering Group, to the project and provided more specific program requirements for the labs. The requirements for the Advanced Prototyping Center were driven by LACI leaders who realized that the start-ups would benefit greatly from a “maker space” where they could produce and test prototypes of their products.

Building Design

Initially, the developers considered the option of constructing a new building rather than redeveloping the existing warehouse. Some thought it would be less expensive and allow for the design of more suitable space. But others believed that reuse was a more appropriately green strategy that would also contribute to the desired image, with exposed brick walls and wood trusses, as well as provide great flexibility and adaptability.

The brick structures did, however, pose several challenges. These included achieving seismic strengthening, circulation connectivity, and access to natural light, as well as keeping the wood trusses and ceilings exposed to view, given fire codes that required them to be covered. Bracing against seismic forces was accomplished through insertion of steel moment frames that also support walls where shear panels and columns were removed. Enclosed spaces were located against the brick demising walls, leaving central spaces open. The layout of circulation paths started with existing corridors and openings in brick walls, with some additional openings added to create the desired pattern of “streets.” Natural light from existing large

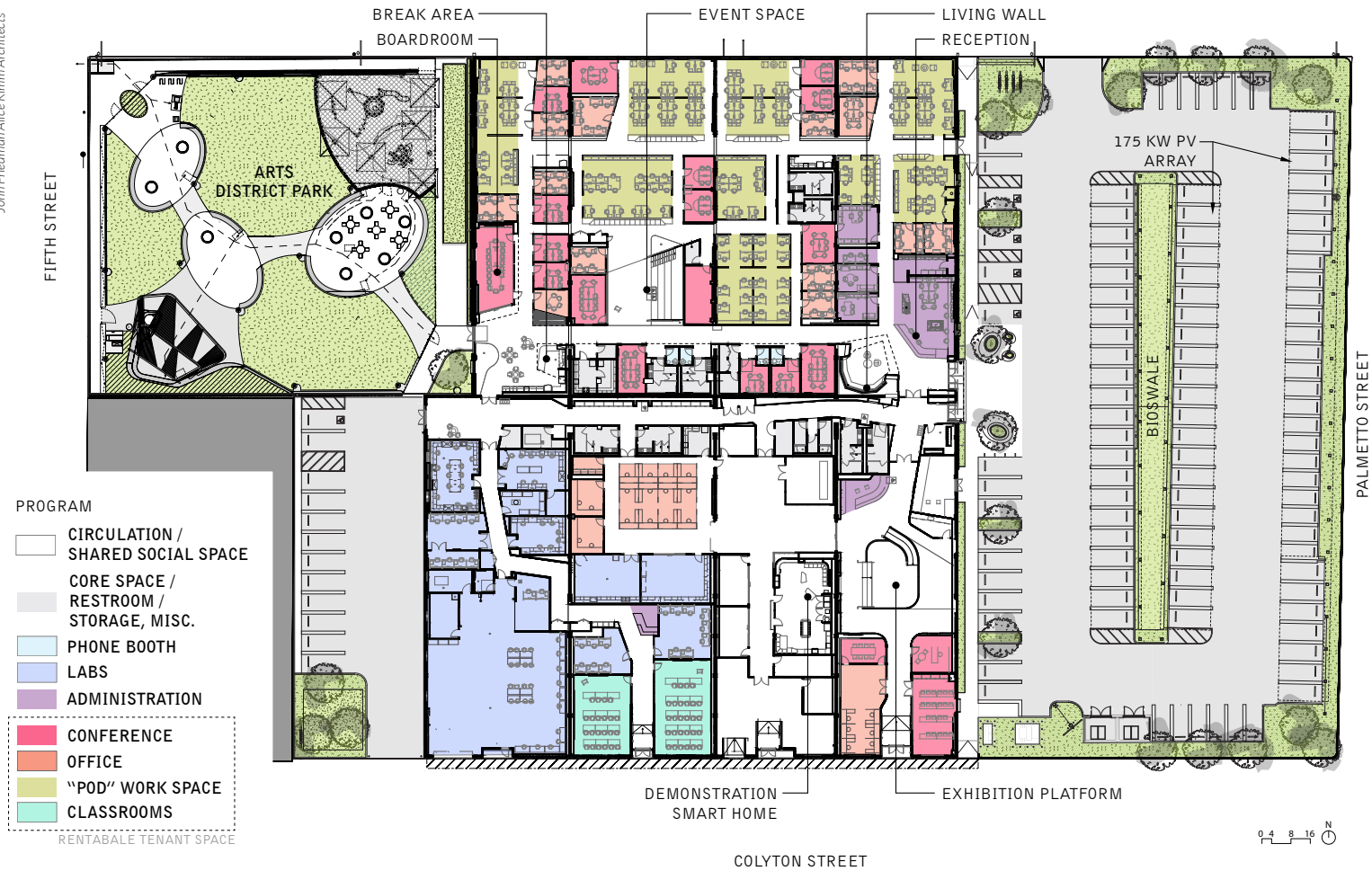


The architects proposed reusing the existing structure and creating a new neighborhood park.

windows along South Hewitt Street was enhanced with skylights and solar tubes. Finally, in order to keep the wood ceiling and trusses exposed, it was necessary to remove the roofing and add insulation and plywood sheathing on the exterior, a costly solution but judged to be worth it for its contribution to image and aesthetics. Overall, the cost of the project was still considerably less than that of building a new facility of comparable size.

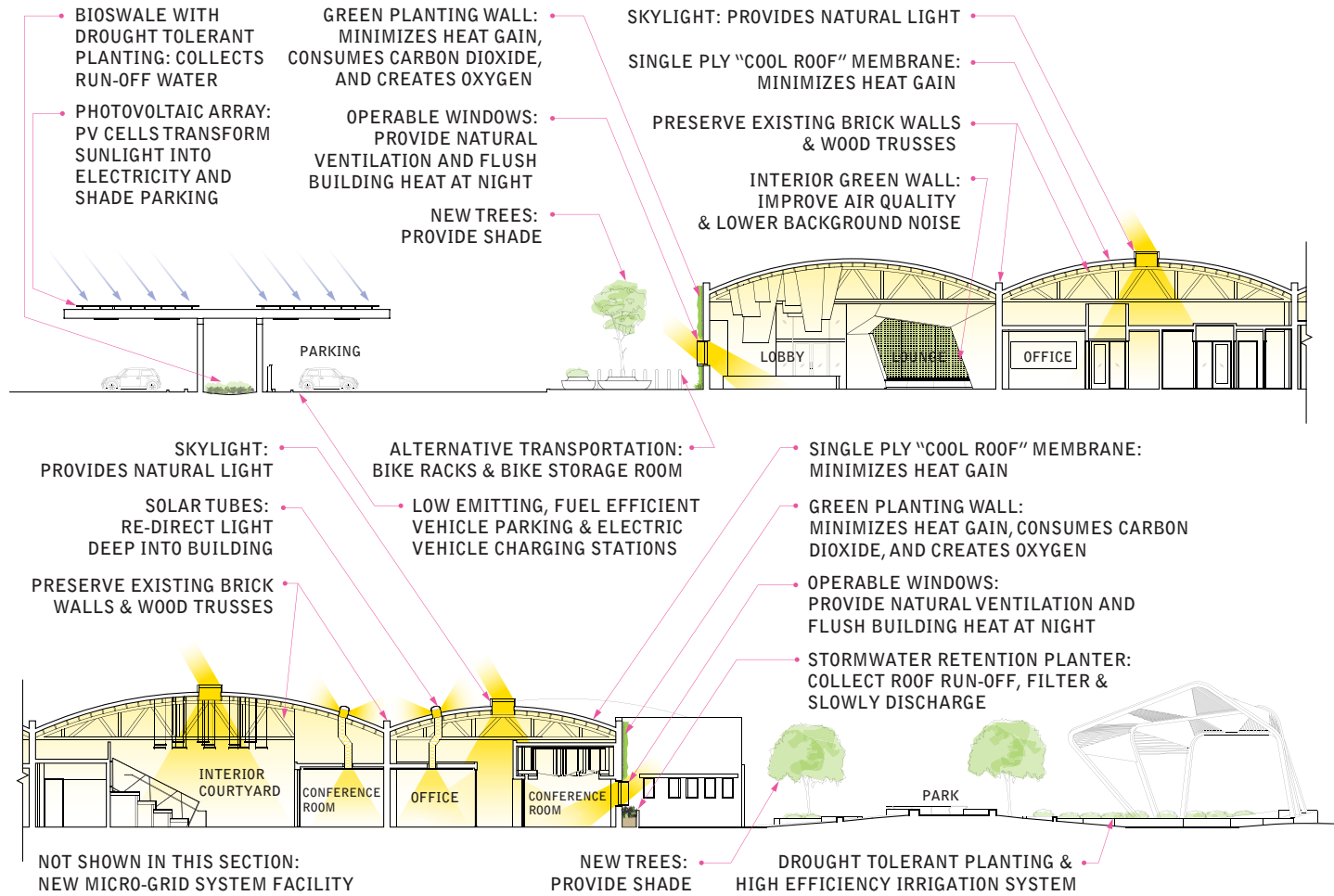
Several options were explored for the site plan, including entering the building directly off of Hewitt Street. However, it was decided to follow the pre-existing plan, retaining and redesigning the surface parking lot on the southern end of the site, now covered with photovoltaic panels and augmented with electric vehicle charging stations, and enter the building through the south wall that faces the parking lot. Interior circulation is provided by a loop off the principal corridor, or “main street,” that runs from the entry, with its living/green wall, toward the north, past the main meeting spaces and culminating at a break area and a door to the park. The central event space is essentially a roofed courtyard with stepped seating.

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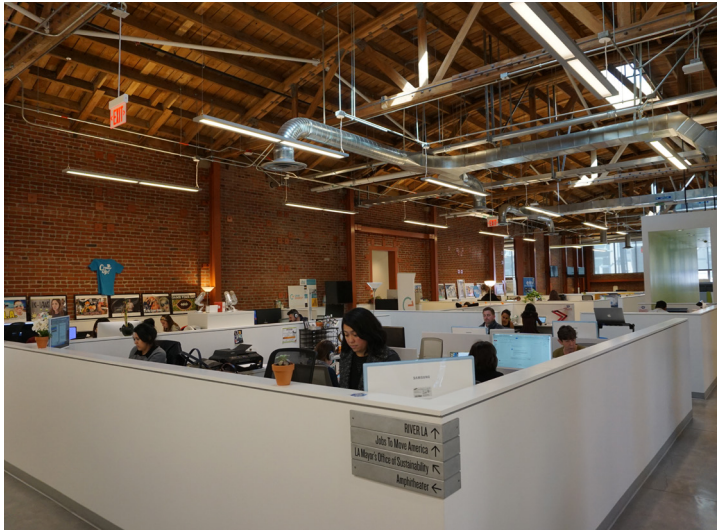


The interior is organized as a village with a series of open offices and wide corridors to promote a sense of community.

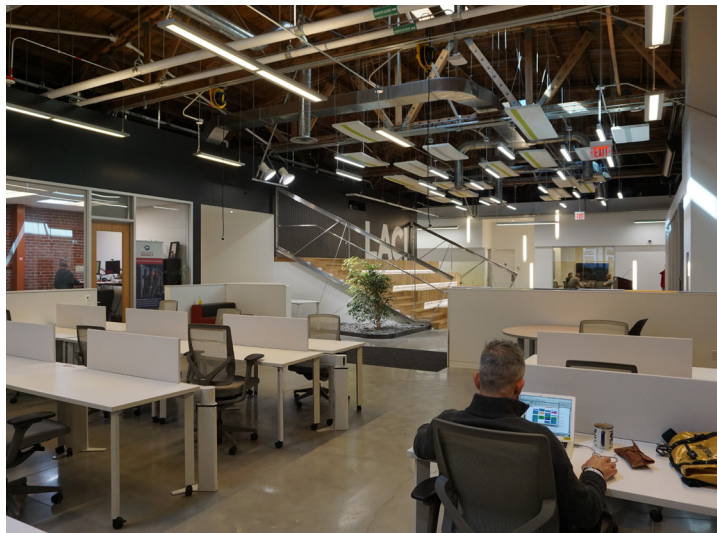
John Friedman Alice Kimm Architects



The design preserves existing brick walls and wood trusses while integrating new green features that enhance sustainability.



The interior has open offices and wide corridors that promote collaboration.



Movable furnishings allow easy rearrangement of the work space as companies change or grow.

where larger meetings and presentations take place almost every day. Anyone walking past can pause to take in the event.

Furnishings for open offices are flexible, with desks that are not only moveable but actually on wheels. Reports are that the flexibility is highly utilized, with layouts changing frequently in response to the growth, shrinkage, or change of occupants. Most importantly, the openness and connectivity are valued by the occupants for the way they reinforce communications and networking. Several tenants stressed the essential characteristic of the design as being the way it supports the community of companies, which some referred to as an “ecosystem” or “village.” Another added that “it has become a space of creativity and invention.”

LADWP spaces are to the west of the main corridor, with an entrance to the customer service area directly off the main entry lobby, and feature a new demonstration “Case Study Home” inspired by the original Case Study House movement that emerged in the 1940s in Los Angeles and that promoted innovative home design and engineering. The prototyping center is to the north of the service area with access from LADWP offices as well as from the LACI area.

Some interviewees stressed the uniqueness of LKIC as an incubator dedicated specifically to cleantech, compared to others that just foster start-ups or technology in general. Many or most of the tenants are or will be making physical products, and the ability to create and test them is essential to their and LKIC’s success; hence, the inclusion of the Advanced Prototyping Center, which started operations in early 2017. It includes a variety of specialized workshops and testing labs with highly specialized and technologically advanced tools and machinery. One lab is equipped to support chemical and biological testing with fume hoods and lab benches. Others specialize in cutting and shaping as well as 3-D printing.

In terms of image, LACI in particular and LKIC overall were designed to be open, creative workspaces, with green features such as light tubes, a smart energy grid, and a living wall that is immediately visible upon entering the building. To help convince the clients of the importance of good design,

the architects presented a slide show that included a widely-published mid-century modern Joseph Eichler case study house where Steve Jobs grew up, connecting quality design with innovation.

Because of funding constraints, the design team had to finish working drawings within a tight schedule, by the end of June 2012. The construction budget was not fixed at the time JFAK was hired. Rather, the firm's cost estimate of approximately \$23 million, including fixtures but not furnishings, became the budget. This did not include the fit-out of the LADWP space or the prototyping center, neither of which had been adequately defined at that time. LADWP would later fund the furnishings and hire Cinnabar, a design-build company that typically works with museums and cultural institutions, to fit out its spaces and design its first exhibits and permanent wall graphics.

The Arts District Park

The Arts District Park is a welcome addition to the project and the neighborhood, providing a green oasis in a landscape otherwise dominated by hard surfaces. It occupies about a half-acre on the northeast corner of the site and consists of four main elements: an informal grass and landscaped area closest to the corner providing seating, eating, and dog-walking spaces, with careful attention to protecting plantings; a children's playground with climbing structures and other equipment at the southeast; a picnic/meeting area at the southwest, closest to LKIC; and a shade structure that can serve as a band shell or performance venue at the northwest corner, which also provides a locus for community gatherings.

Interestingly, the park was not proposed by the city or LADWP. Rather, JFAK suggested inclusion of a park at the time of its initial selection interview, utilizing a corner of the site that was not needed for LACI or LADWP functions and would be easily accessible to the community. Because their office is in the neighborhood, the architects were well aware of the lack of green space in the Arts District. Although the area had been developed for industrial uses, which do not require recreational open space, there were growing numbers of people living there as warehouse space was converted into loft apartments and condos. The notion was well received

by the surrounding community and the agencies involved in the development of LKIC.

Originally, the park was to have been funded by the CRA/LA as part of its overall responsibility for redeveloping the area. The CRA/LA organized community outreach, including a survey and five community meetings, and hired MIG, a planning firm that specializes in organizing community input. MIG conducted the survey and facilitated and documented the meetings on wall-sized posters. One meeting was held at SCI-Arc and another at the Barker Block across the street from the site; others also took place in the neighborhood. The community is reported to have been very vocal with a rather clear vision of what residents wanted, including organic shapes that would be soft and informal in contrast to the hard, rectilinear industrial surroundings. They also wanted community art; the solution is a "rotating" mural consisting of panels mounted on a brick wall that bounds the park to the west, painted by successive artists selected by a community group called Art Share.

The CRA/LA submitted an application in 2011 for state funding for the park; however, the application was rejected because all CRAs statewide were in the process of being disbanded. This put the park in jeopardy since it could not be funded as part of the main LKIC project. However, in 2013, under pressure from local residents, the City of Los Angeles stepped in and won the support of the local councilperson, Jose Huizar, who earmarked developer fees for the park, which was appropriately considered to be public infrastructure. The city designated the Department of Recreation and Parks to manage the park, and the city's BOE was put in charge of design, bidding, and construction, as it was for the balance of the development of LKIC. Rick Fisher, from the BOE Architecture Division, led the effort, working cooperatively with JFAK, who assisted pro bono and was primarily responsible for designing the shade structure.

Early concepts evolved with community input. The children's playground was an initial proposal that some community members wanted but others questioned, arguing that the small population of children did not justify it. Despite those concerns, it appears to be well used.

A major controversy concerned the Department of Recreation and Parks requirement that the park be enclosed by a tall fence. Strong arguments were made both for and against the fence. On the one hand, easy access to the community and a sense of openness were valued. On the other, there were concerns about safety (securely containing children within the park during the day), cleanliness (keeping dog walkers out at night, as the municipal code requires that parks be accessible for dogs), and occupation by homeless people, who were more visible in the area at that time than they were in 2017. Some argued that these problems would be avoided because the adjacent Barker Block residential development, which overlooks the park, would provide “eyes on the street.” In the end, Recreation and Parks prevailed and attempts were made in detailing the fence to make it difficult to climb while also appearing more residential and visually permeable, with questionable success. The fencing consists of square posts holding a rectangular metal mesh. Though visually permeable, the fencing does not enhance the feeling of openness or connectivity. In addition, the keypad system recently adopted by Recreation and Parks for its gates has a forbidding appearance; many potential users of the park do not bother to try the gates during operational hours, as one look at the keypad makes them assume that the gates are locked.

Another interesting challenge involved the shade structure, which the Department of Building and Safety, the permitting agency, decided to treat as a building, despite the fact that it has no walls, doors, or windows. It was also rather complicated to build, given its irregular shapes and Teflon fabric covering.

Fisher, the landscape architect, proudly pointed to what he perceives as the park’s successes. They include layers of habitability accommodating varied types of users, times of day, and scales of activity and its high quality of construction, thanks to a contractor who was able to execute the sophisticated concrete forms and other design features. The park also incorporates the city’s first public grey water recycling system with an underground storage tank and a filtration system linked to bio-swales integrated into the park’s design that provides water for the landscaping. In addition to



Arts District Park offers a green oasis within the dense warehouse neighborhood.



The park includes landscaped areas, a children’s playground, and seating areas.



A shade structure provides a locus for community gatherings.

the activities it supports, the park provides a green oasis in what is otherwise a hard urban landscape.

ACTIVITIES AND PROGRAMS

LKIC's three interrelated parts—the business incubator (LACI), the LADWP's Customer Engagement and Sustainable Living Labs, and the Advanced Prototyping Center—each serve particular yet interrelated functions.

LACI

LACI's mission is no less than to build a green economy for the City of Los Angeles. It does so by offering collaborative work space and a variety of programs to support cleantech entrepreneurs and businesses. The incubator space is home to a mix of cleantech businesses and related nonprofits. LACI offers several tiers of supportive services to portfolio companies, tenants, and members.

LACI programs are targeted toward cleantech entrepreneurs including start-ups and evolving businesses looking for help with product develop-

ment, meeting a customer need, finding financing, management, and marketing. Integral to LACI's support system are their Executives in Residence, of which there were six in early 2017. Each executive supports five or six companies, meeting with them weekly, while the companies present a quarterly status report to a panel of the executives and LACI's top managers. There are also volunteers and interns, some of whom are hired on a permanent basis by the businesses. In total, LACI has the equivalent of about 35 full-time staff.

In appealing to companies who might wish to be part of the incubator, LACI takes into account several considerations. They define "cleantech" broadly as products or services that advance sustainable or efficient use of resources. The categories of products include new materials, agricultural technology, air quality, the built environment, energy generation, infrastructure and storage, information technology, mobility, waste, and water. Companies working in these areas are organized into "clusters" that bring together those with similar or related interests. The clusters typically group pairs of focal areas such as built environment and transportation, agriculture and waste, and energy and water. With about 200 members each, the clusters meet once per quarter to exchange ideas and discuss mutual concerns and possible solutions.

LACI is looking for companies with vision—great ideas that push current boundaries, innovative and even disruptive technologies, and business initiatives that will have big environmental, social, and economic impact. LACI can be particularly helpful to companies in their early development but supports them through all stages, ranging from "genesis" (haven't formed a company yet) through "growth" and finally "expansion." Companies must apply for admission to the incubator, but fewer than one out of about eight make the cut. For those that are accepted, expectations for commitment and effort are high, and one expectation is that they create local green jobs. Senior-level advisors help guide them through the process to commercialization and hold them accountable along the way. LACI also helps with introductions to venture capitalists when companies are at the fundraising stage.

In addition to the mentoring provided by Executives in Residence, there is also a roster of presentations, often held in the open courtyard/event space so anyone can attend, and trainings on specific subjects. The cost for tenants or members to host events on campus is moderate, and event space is often free for portfolio companies. Internet service, printing, and mailboxes are included with LACI membership.

LACI's Tenants and Portfolio Companies

Tenants on campus include “portfolio companies” that receive considerable support services (about 30% have dedicated space at LKIC), tenants that rent space but are not in the portfolio, and partners that contribute to the community and participate in programming.

LACI's rigorous process of selecting the companies it hopes to foster is based on an assessment of their potential and the likelihood of their success. LACI practices outreach by attending outside events and inviting potential members to attend events at LACI, generating a pipeline of companies that want to join. The vetting process starts with a 30-question online application and submission of a business plan. Businesses that look promising are then reviewed and evaluated by LACI management staff and advisors. This is followed by interviews. If accepted, one of LACI's Executives in Residence is assigned to mentor the company.

LACI receives 20 to 30 applications per month and selects only about 12%. To be accepted, a company must be a start-up (less than five years old), typically with less than \$5 million in revenue and fewer than 50 employees. Most tenant companies are younger and smaller than these limits. LACI is also concerned about what the company will offer to the community, and its anticipated contribution is documented in a letter of agreement and in annual impact reports.

LACI now negotiates a modest equity interest in each venture, generally ranging from about 2% to 5%, depending on how far along the venture is and its likelihood of success. Income from significant liquidity events generated by portfolio companies going public or being bought out is contributed to the endowment.

In return for rent and membership fees, LACI provides a variety of support, including mentoring, review of plans and products, and assistance with marketing, networking, training, and introductions to potential investors. In early 2017, there were 40 portfolio companies employing about 500 staff. Only about 30% occupy space at LKIC, and not all tenants are portfolio companies; some just rent available space in the building.

LACI intends to maintain a portfolio of approximately 50 companies with an anticipated turnover of about 10 per year. Its strategy for spreading its influence is to open centers in other locations. It now has extension facilities at the California State University at Northridge in the San Fernando Valley, at the Port of Los Angeles with a focus on clean shipping, and in Menlo Park in the heart of Silicon Valley. It is also expanding its reach globally through its Network for Global Innovation (NGIN) with 18 members in nine countries. The notion of NGIN is reciprocal: US companies can be connected to international markets, and international companies to LACI and US markets. The initiative is linked to the mayor's Department of International Trade.

Tenants may occupy assigned space or use flexible workstations on a first-come, first-served basis. Some spaces can be reserved for certain dates or times. Rent is \$500 per month for an assigned workstation and \$250 for the use of an unassigned desk. Often, a company will rent a mix of the two types. There are about 230 desks at the facility.

Tenants interviewed in early 2017 included two nonprofits—the Los Angeles office of the US Green Building Council (USGBC), responsible for the LEED rating system, and CicLAvia, which organizes citywide bicycle events that raise environmental awareness—and three start-ups: the Verdical Group, green building consultants; Pick My Solar, which offers homeowners comparison shopping among solar installers; and Repurpose, which manufactures and sells compostable tableware (cups, plates, and cutlery) made from plant-based materials. The last two are LACI portfolio companies.

The tenants were uniformly enthusiastic about LACI and the value of being located there. For the USGBC, having its meetings at LKIC exposes

participants to a myriad of green technologies and to companies who might consult to them. Verdical Group networks extensively with other tenants and appreciates the stimulation of the open, flexible work environment. Pick My Solar found LACI's support invaluable to building its services and company, particularly the weekly meetings with advisors, networking, validation of its work, and help with marketing, branding, and fundraising, calling LACI "everything a start-up needs." LACI also connected the company to investors who provided 80% of its capital and to customers who accounted for about 60% of its first 100 sales. For Repurpose, LACI's assistance in raising capital was essential to the company's survival and success.

In terms of the future, LACI is dedicated to strategic planning and evaluating its performance in light of its goals. LACI plans to continue to grow the number of high-quality cleantech start-ups in its portfolio and to increase the number of metrics it tracks for self-evaluation.

Diversity and Inclusion

LACI devotes considerable attention to improving diversity and inclusion—of its staff, within its companies, and in the cleantech industry in general. It has two staff dedicated to this function: Director of Community Engagement Estelle Reyes and Executive in Residence for Diversity Tracy Gray, as well as an advisory council that reflects the mix of people it hopes to attract.

LACI makes the case that diverse companies have been shown to be more successful because they are more innovative and more in touch with diverse customer bases—and believes that creating and maintaining diversity is the right thing to do. The LACI Diversity Manifesto states, "We empower entrepreneurs through access to high-impact resources to create innovative solutions for a just transition towards a sustainable and equitable future." Its Diversity and Inclusion Initiative "is focused on building a more inclusive ecosystem that integrates women, people of color, and the economically disadvantaged into the cleantech and sustainability sector, and the entrepreneurial ecosystem more broadly."

LACI also aims to increase diversity among its own staff and in its portfolio companies. In terms of gender, the goal is to reflect the overall regional



Tenants offer products and services that promote environmental sustainability.



LACI tenants include cleantech companies and nonprofit organizations.

workforce at 51% female; in late 2016, LACI was 39% female, and the portfolio companies were 34% female. In terms of ethnicity, the goal is to become more representative of Latino and African American populations, two groups that are underrepresented, and less Asian and White, which are overrepresented.

The key to evaluating LACI's success in this area is to measure the actual composition of LACI and company employees and compare them to the composition of the general regional workforce. To that end, LACI periodically surveys its companies and publishes the results. LACI has also articulated measurable goals to improve diversity. One is to increase the number of portfolio company founders who are women from 16% to 20% and people of color from 14% to 23%, following a national benchmark for high-tech incubators.

LACI has received \$250,000 in grants to support increased diversity, including one specifically targeted toward encouraging more participation by women. One initiative included a workshop on unconscious bias and self-sabotaging behavior.

LACI offers other programs that encourage inclusion. It reaches out to STEM (science, technology, engineering, and math) students who are invited to take advantage of LACI's resources, including the prototyping machines, for projects and to participate in job training. There are also typically about 20 college student interns, whom LACI refers to as its "talent pipeline," engaged at any time.

Other specific strategies to improve the representation and working conditions for women and minority-owned small businesses include expanding recruitment networks and finding partners in the community who can help identify pipelines for these companies, creating diverse selection committees and fair processes, intentionally designing programs for women and minority entrepreneurs, and creating an inclusive culture. As part of its workforce development efforts, LACI insists on a commitment from all its companies to offer openings to low- and moderate-income job seekers.

Advanced Prototyping Center

The Advanced Prototyping Center, owned by LADWP and managed by LACI, is an element of the building program that was not in the original plans but was recognized by LACI as being critical to the development of clean technology start-ups. Because cleantech involves mainly tangible products, support for designing, building, testing, certifying, and moving toward manufacturing the products was deemed an essential component. The center includes a digital prototyping lab, 3-D printing shop, biochemistry lab, core lab, electronics lab, machine shop, industrial sewing shop, and welding shop with leading-edge equipment, software, and tools—much of which was donated or purchased with a grant from the US Economic Development Administration. The fact that LADWP's Efficiency Solutions Engineering (ESE) Group is co-located makes engineers and scientists available to help test the prototypes and judge their applicability and readiness for market. While the facility is most accessible to the LACI start-ups located on site, memberships are available, ranging in cost from \$250 for individuals to \$1,000 per month for corporations. Training is also available from experienced technicians and advisors.

LADWP Customer Engagement and Sustainable Living Labs

This set of functions, while targeted for location at LKIC, was not fully defined until construction was well underway and Terry Brungard, manager of the ESE Group, was assigned to the labs. There are two main components: (1) elements intended for direct customer involvement aimed at raising awareness of how energy and resource efficiency can be improved and featuring a variety of displays and interactive components, including the Case Study Home and lighting and plumbing labs; and (2) offices, workstations, and labs that support the ESE Group. LADWP feels strongly that LKIC is the perfect location for these functions and supports the synergy achieved through co-location with LACI and the Advanced Prototyping Center. Brungard expressed it as fitting into the "virtuous cycle for emerging technology development and deployment," a cycle that consists of:

- emerging technology research and development (technology incubation)
- commercialization (business incubation)

- market adoption (utility incentives)
- evaluation, measurement, and verification.

The ESE Group engineers help the LACI businesses with product development, testing, marketing, and incentives, allowing them to utilize their labs and providing input from LADWP customers. This location also supports LADWP’s objective of helping develop and implement emerging technologies. Like many utilities, LADWP incentivizes customers to invest in technologies that save energy and water because reducing demand reduces the requirement to bring new capacity on line, a goal expressed by the slogan “negawatts instead of megawatts.” To embody and illustrate these objectives, Brungard also suggested and helped implement many green features for the building as a whole, including its grey water recycling system and the electric microgrid.

The Customer Engagement and Sustainable Living Labs, by contrast, managed by LADWP’s Customer Service Division, feature interactive exhibits for LADWP customers to learn about their water and power utility, LADWP’s services, and what LADWP is doing to ensure a sustainable future for the City of Los Angeles. The water and energy efficiency exhibits were scheduled to be open to the public for self-guided as well as prearranged guided tours by summer 2018.

The Case Study Home features a variety of smart appliances, such as a refrigerator with an internal video camera that shows what’s inside without having to open the door and appliances that can respond to peak demand periods by turning themselves off. Future plans include rotating displays, installation of waterless urinals, and more explanatory materials for elements like the microgrid.

In addition to LADWP’s customer engagement labs, which are open to the public, LACI provides regularly scheduled tours of the facility and invites the public to the events that are held there.



LACI offers regularly scheduled tours of the facility.



LACI offers programs and events that support tenants and promote diversity and inclusion.



The Customer Engagement and Sustainable Living Labs Case Study Home features energy-saving appliances.



Lighting and plumbing labs allow ESE Group engineers and LACI businesses to evaluate new technology.

FINANCING

The \$50.2 million development of LKIC was funded from a variety of sources. LADWP, which owns the site and facility, provided about 42% of the capital funding while other governmental and private entities provided the remaining 58%. Those most responsible for setting up the financing described it as particularly complex and challenging compared to other projects. One major challenge resulted from losing the CRA/LA at a crucial moment, which affected the overall project budget and removed park funding entirely. Another challenge was posed by the utilization of New Market Tax Credits, with which the city had no experience and which required creating a separate nonprofit entity since governmental agencies do not qualify. Applying for the US Department of Commerce Economic Development Administration grant was also said to have been very complex. The project was still short of funds when successive mayors made available city-controlled federal Qualified Energy Conservation Bonds as well as a Community Development Block Grant (CDBG), which together made up the necessary funds.

The La Kretz Foundation donated a building in Hollywood that LADWP could either sell or use for a planned customer service center in that area. While not a direct cash contribution to the purchase of the LKIC site, it allowed the project supporters within LADWP to argue that, in effect, it lowered the cost of purchase by freeing up \$3 million that would otherwise have had to be expended elsewhere. This “sweetened the deal” for LADWP, which holds the title to the LKIC facility, and helped frame the value argument for a new, untried, and untested investment by the public utility. In return for the donation, LKIC is, obviously, named for the donor. While the donation was indirect, the table showing development costs counts it as a contribution to the project, which was its intent.

Operating Budget

LACI’s 2016 annual operating budget was close to \$4 million. Its revenue came from many sources, including rent charged for office space, fees for membership and for the use of event and meeting spaces, sponsorships, donations, and services. The latter included LADWP’s payment to LACI for operating the facility, which amounted to \$760,220 in 2016. Up to the

TABLE 1: DEVELOPMENT SOURCES AND USES

SOURCES		USES	
Local, State, Federal, and Private Funding		LKIC	
New Market Tax Credits	\$9,526,000	Construction	\$31,091,000
City of Los Angeles/Los Angeles Department of Water and Power Federal Qualified Energy Conservation Bonds	\$8,831,000	Site acquisition	\$11,125,000
La Kretz Foundation (for land acquisition)	\$3,000,000	Design and other project costs	\$5,893,000
US Department of Housing and Urban Development Community Development Block Grant	\$3,000,000	US Department of Housing and Urban Development Community Development Block Grant	\$3,000,000
US Economic Development Administration US Department of Commerce	\$2,124,000	US Economic Development Administration US Department of Commerce	\$2,124,000
City of Los Angeles Community Redevelopment Agency	\$1,250,000	City of Los Angeles Community Redevelopment Agency	\$1,250,000
New Market Tax Credits Leverage Loan interest payment	\$512,000	Arts District Park	
US Department of Energy Efficiency Community Block Grant	\$165,000	Construction	\$1,353,000
Los Angeles Department of Water and Power (LADWP)		Design and other project costs	\$724,000
Land acquisition	\$8,125,000	TOTAL	\$50,186,000
Customer Service Division	\$5,200,000		
Energy Efficiency Administration Center	\$2,300,000		
Energy Efficiency Technology Laboratory	\$2,660,000		
US Economic Development Administration matching funds to LADWP	\$1,416,000		
Arts District Park			
City of Los Angeles	\$2,077,000		
TOTAL (LKIC and Arts District Park)	\$50,186,000		

TABLE 2: LACI 2016 OPERATING BUDGET

REVENUE		
Grants		\$1,631,000
Rent/usage		\$869,000
Services		\$875,000
Membership		\$392,000
Sponsorship		\$95,000
	Total	\$3,862,000
EXPENSES		
Staffing		\$2,496,000
Contract services		\$585,000
Operations		\$233,000
Facilities and equipment		\$146,000
Telecommunications		\$97,000
Travel expenses		\$69,000
Business expenses		\$65,000
Marketing and advertising		\$60,000
Special events		\$26,000
Meals and meetings		\$24,000
Other		\$18,000
	Total	\$3,819,000
	Net Profit	\$43,000

time of writing, the city has provided funds from CDBG sources totaling about \$1.1 million every year, about 2% of the city's total CDBG allocation, and the amount was increased for 2017. LACI expects to continue to receive these funds as long as the program exists. Its major expenses include staffing, services, and operations. Facility costs are very low since the building was paid for, there is no debt service, and LADWP leases it to LACI for \$1 per year; in addition, the building is very energy efficient, so utility costs are low. All these factors contribute to the core strategy of keeping the costs of occupancy for start-up companies as low as possible.

LADWP's contribution for building operations covers janitorial services, gardening, maintenance, wi-fi, monitoring the grey water system, and operating the prototyping center and training facilities. LADWP pays directly for its operation of the Customer Engagement and Sustainable Living Labs. The Arts District Park is maintained by the city's Department of Recreation and Parks and does not have a defined budget.

PROJECT EVALUATION

LKIC is a unique project, combining a green tech incubator with a prototyping center, a public utility's Customer Engagement and Sustainable Living Labs, and a public park that serves an emerging neighborhood. While one might judge the success of each element separately, their synergy and interactions also need to be taken into account. LACI is a very successful incubator by industry standards. Its impact, while impressive, has not yet "gone to scale" such that it would create—or substantively contribute to—the transformation of the local economy to one that is much more dominantly green, as recent mayors have envisioned. Still, LKIC presents some impressive accomplishments and offers some insightful lessons for future projects. Among these are the importance of strength and continuity of leadership, the potential for good design to contribute to and reinforce an organization's mission, and the ways in which diversity and inclusion can improve bottom-line outcomes. And the project continues to evolve. As LACI Chief Partnerships Officer Ben Stapleton commented after an Urban Land Institute panel on the project that was held at La Kretz in October 2017: "Please come back and visit. This building has a lot of its story left to be written."

IMPACT

Success

LACI, which tracks various metrics of its performance, appears to be a considerable success. In barely six years of operation, LACI has assisted or is assisting 72 companies that have raised over \$159 million in capital, earned \$220 million in revenue, and created 1,700 direct or indirect jobs (the estimate includes those related to sales at a standard multiplier of job creation). These count only permanent jobs, not temporary ones such as those related to construction. LACI projects its current overall impact at about \$379 million in economic value.

LACI's annual report for 2016, titled *Just Impact*, defines its impact as follows: "Impact as we frame it reflects economic, environmental and social measures. We call it Just Impact ... just in that our aim is to be inclusive, fair and equitable; just in that it is a momentary reflection of data-driven industry measurements; and just in that it is only the beginning." The study reports a number of impressive comparisons between 2015 and 2016. LACI companies reported 318 full-time equivalent employees in 2016 compared to 162 in 2015, almost doubling, while its companies raised \$132 million compared to \$80 million in capital, a 64% increase. Considering social indicators, the number of women employed rose 117% and minority employment rose 195%. LACI also estimates the environmental impact contributions of its companies. In 2016, they contributed 77% more greenhouse gas reduction compared to 2015, generated 218% more electric power, saved 589% more water, and avoided 45% more solid waste.

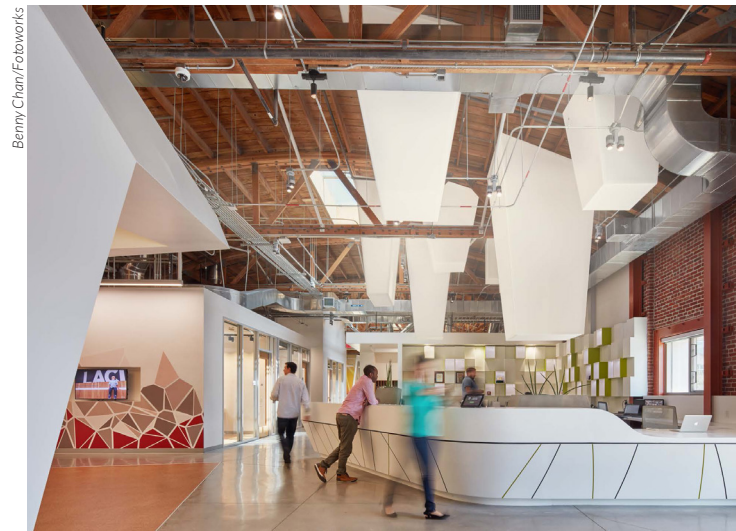
Growth

LACI has grown beyond LKIC with branches in three other locations, including Menlo Park in the heart of Silicon Valley; at California State University Northridge in the San Fernando Valley, which produces a very large number of engineering graduates; and at the Port of Los Angeles. LACI's reach has become international through its Network for Global Innovation (NGIN), with 18 members in nine countries providing access to international markets for its companies.



John Friedman Alice Kimm Architects

A unique public private partnership transformed a vacant warehouse into a cleantech hub.



Benny Chan/Fotoworks

The facility is recognized as one of the premier cleantech incubators in the world.

Recognition

According to information on its website and in its *2016 Impact Statement*, LACI is now recognized as one of the premier cleantech commercialization programs in the world. In 2015, it was ranked as the number three “Top University-Associated Business Incubators in the World” (out of 1,200) by UBI Global and one of the two “High Impact Incubators in North America.” LACI was selected by the US Department of Energy as one of its three national incubators and chosen by the California Energy Commission (CEC) to establish a Los Angeles Regional Energy Innovation Cluster through a \$5 million CEC grant. Ten Obama administration cabinet officials visited the campus, including Vice President Biden.

Diversity and Inclusion

LACI is also applying considerable effort and achieving success in increasing diversity and inclusion in a field that is dominated by White and, to some extent, Asian males. It has hired dedicated diversity staff, required its companies to have inclusive hiring practices, tracked outcomes, reached out to minorities and women at all levels (executives, entrepreneurs, and staff), and mounted programs to assist them in achieving employment and success in the field. While these goals are laudable in any location, they are perceived as being particularly important in a multicultural city like Los Angeles.

Impact on the Arts District

In addition to bringing new businesses and jobs to the campus and the surrounding area, LKIC’s main contribution to the Arts District is the provision of its only community open space. While the Arts District appears to be thriving and even “hot,” its margins still contain underutilized, older warehouses and manufacturing facilities. Formerly home to the city’s industrial base, that aspect of economic activity was and still is said to be eroding. LACI is working to create cleantech jobs, and some of its companies are said to be leasing manufacturing space in the area, at least in part in order to stay connected to LACI.

Advanced Prototyping Center

While not included in the original vision, the prototyping center came to be viewed as essential by LACI management. Though at the time of the

site visit it was just becoming operational, many interviewees spoke to the unique capability it provides for start-ups to fabricate and test their products as they evolve. This is seen as a unique and essential feature of LKIC.

LADWP Customer Engagement and Sustainable Living Labs

While data are not available that would quantify the impact of the labs, partly because they were just becoming operational in early 2017, its intentions are laudable and the means it employs to demonstrate and communicate energy- and resource-efficient technologies appear likely to be effective. Co-location of LADWP’s Efficiency Solutions Engineering Group is a great asset to LACI and vice versa, since the group’s engineers help the companies with product design, testing, and refinement, as well as representing a potentially very substantial customer base for their products; in return, the companies feed promising and needed innovations to the utility.

Arts District Park

As the only green space in the community, the park can claim a number of positive impacts. First, its planning process was effective in identifying and documenting neighborhood needs. The park as realized incorporates the identified higher-priority items including a children’s playground, performance space, pet-friendly facilities, informal seating and relaxing areas, and safety. It also meets the Department of Recreation and Parks objectives for security and limited maintenance costs, though the fence and the lock on the gate do not enhance its sense of openness and connectivity to the surroundings. In addition, the park is well used by local residents, workers, and LKIC staff and visitors. It is very attractively designed and provides an organic, green oasis in an otherwise hard and rectilinear neighborhood. Perhaps it could have been better integrated with the interior work spaces.

OBSERVATIONS AND LESSONS LEARNED

Continuity of Political and Staff Support Leads to Resilience

The project spanned two mayoral administrations, those of Mayors Villaraigosa and Garcetti, with remarkable continuity of political support. Villaraigosa had the initial vision, and Garcetti continued the commitment to sustainability, economic growth, and the redevelopment of the districts

adjacent to the downtown core, using the innovative notion of becoming a cleantech leader to reposition Los Angeles' economy. The project was severely threatened when its original sponsor, the CRA/LA, was dissolved, but LADWP stepped in and took over leadership. The transition was greatly helped by the continuity of senior staff, many of whom moved among the agencies. This, along with the fact that the project was universally viewed as potentially being of great value to the city, gave it the resilience it needed to survive—and then to thrive.

The Power of Synergy

LKIC represents a unique type of synergy among the city government, a major public utility, local research universities, and entrepreneurs, and particularly in the way its three components complement and reinforce one another.

- LACI, the incubator, provides space and, more critically, support from veteran innovators who share their experience with the start-ups, which also benefit from co-location with others who are working in similar or parallel areas and can stimulate and help each other.
- LADWP uses the innovation campus to develop and test new water- and energy-saving and environment-protecting technologies and then demonstrates them to its customers. LADWP provides potential clients for the tech start-ups; it is also a savvy evaluator of how well the new products work and how they might be improved, which is invaluable to the start-ups as they move concepts and designs toward implementation. The fact that a major public utility stepped forward to lead such a project to fruition may also serve to inspire other utilities to venture into similar projects.
- The Advanced Prototyping Center provides the tools and expertise that enable the startups to produce testable versions of the products and technologies they have imagined and designed as well as laboratories for actual testing in cooperation with LADWP engineers.

Outstanding Leadership and a Model Incubator at LACI—A Smart Organization that Runs a Model Incubator

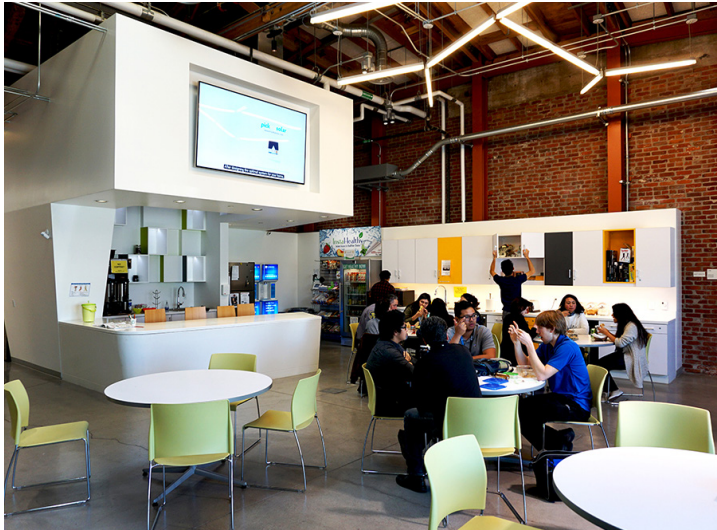
LACI exhibits all the hallmarks of a smart and mission-driven organization. It devotes a great deal of thought and effort to how it selects companies to incubate and how to support them. It is a model for how to run an incubator, especially a cleantech one. This grows from LACI's outstanding leaders who are deeply experienced, thoughtful, and successful innovators in their own right. The leadership team has developed and implemented a powerfully supportive system, from the selection criteria for start-ups and mentoring from other successful innovators to benchmarks that measure progress, consequences if those benchmarks aren't met, and a track record of measurable success including jobs created, products sold, capital raised, and economic impact.

Good Design Supports and Expresses the Mission and Sustainability

Building design is appropriate, supportive, and expressive of the project's mission. A carefully repurposed warehouse, the conversion provides fixed as well as flexible spaces, support facilities, and an appropriately contemporary, stimulating, and innovative image. Fitting for a cleantech incubator, the design is expected to achieve LEED Platinum certification (with the goal of becoming net-zero) through such features as reuse of the existing building, a solar electric microgrid, abundant natural light, water saving and grey water recycling, electric vehicle charging, energy-efficient air handling units, and many other features.

In the Right Location

LKIC is central to the city's principal research and technological universities, government offices, businesses, and transportation. It was envisioned as the locus of the Cleantech Corridor, although, as of 2017, only LKIC had been realized and the larger concept, while referenced on LACI's website, has lost its primary public underwriting entity with the demise of the CRA/LA. While the Arts District itself is under increasing pressure for higher-end housing, restaurant, gallery, and retail uses, there are still underutilized warehouses and manufacturing buildings for start-ups to expand into within the greater industrial corridors of the region.



The building promotes synergy and collaboration among cleantech tenants and the community.

Green Space

The park, which is very pleasant, provides a welcome amenity for the campus and fills a very important need for the surrounding community, which was starved for open space. It also links the two together in a positive way.

MEETING PROJECT GOALS

GOAL: Support job creation, workforce development, and reinvestment in downtown Los Angeles.

It appears that this goal is being realized in substantial ways, with over 1,200 jobs created and a strong commitment to workforce development through internships and the fostering of entrepreneurial enterprises.

GOAL: Advance the city-wide mandate to move toward sustainability by incubating cleantech companies and encouraging innovation in cleantech and related sectors.

LACI can claim that its companies are at the forefront of innovation in clean technologies, with new and effective products, some of which are patented, and that its programs and structure are contributing to their success.



LKIC has attracted new businesses and jobs to the thriving Arts District.

Several of the company leaders reinforced this claim, praising the supportive services provided by LACI and the LKIC “ecosystem.” In addition, LACI is contributing to sustainability through the synergy between LACI and the LADWP customer center and its engineering unit, which helps companies refine and market their products. If it can “move to scale” and support many more companies, this goal could be fully realized.

GOAL: Help small businesses and entrepreneurs build profitable ventures that contribute to the local economy.

Again, this is the essence of what LACI and LKIC are accomplishing through the nurturing services and environment they provide.

GOAL: Promote cultural and urban preservation and revitalization of the downtown Arts District.

LKIC contributes substantially to the Arts District, principally through providing the only park in the area, through the rehabilitation of the

underutilized warehouse that is now its home, and by bringing additional dynamic businesses to the area.

GOAL: Incorporate community and stakeholder participation.

This goal has been fully achieved. The various stakeholders for the city and its agencies, as well as LADWP and LACI, were fully engaged in planning the campus. Even though the concept for the park was initially put forward by the architects, it was enthusiastically embraced—and ultimately demanded—by the community, which participated in five workshops and provided substantial input that was respected by the designers. Community activists also provided the necessary pressure that resulted in the local council district office allocating funding for the park’s design and construction.

SELECTION COMMITTEE DISCUSSION

The Selection Committee praised La Kretz Innovation Campus + Arts District Park as an example of a public project that embodies the City of



Arts District Park is used throughout the day and evening by area residents and workers.

THE ARCHITECTURE CREATES A SPACE THAT FOSTERS INTERACTION, CREATIVITY, AND A SENSE OF COMMUNITY WITH THE ENERGY AND SYNERGIES THAT COME FROM BEING WITH OTHER PEOPLE WHO ARE WORKING TOWARD SIMILAR GOALS.

Los Angeles’s efforts to position itself as a cleantech leader and sustainable urban center. They noted the importance of having buy-in from two mayors and a strong business model. With Los Angeles Department of Power and Water taking the lead, it illustrates an innovative way for a city to participate in economic development. It also offers a model for reconciling the often conflicting goals of people, planet, and profit, showing a path to doing well by doing good.

The committee appreciated the project’s attention to programming and design, including the incorporation of LADPW services into the campus and intention to provide access to the twenty-first century economy via the Customer Engagement and Sustainable Living Labs and the Advanced Prototyping Center. They complimented the way the design fosters interaction, creativity, and a sense of community by bringing together people who are working toward similar goals.

The committee recognized the Arts District Park as an important community amenity that was not part of the original project mandate and appreciated its value, especially in an evolving neighborhood where public parks were non-existent. They were disappointed, however, that it was not better integrated with the building and the surrounding neighborhood, observing that the gate and fence seemed to discourage access. Visual and program-

ming connections between the building and park would have increased the project's sense of accessibility and inclusiveness, enhancing its connection to the surrounding neighborhood and contributing to the campus's identity as a community hub.

The committee felt that the project was nicely done, but noted that similar projects have been completed in other places. While they agreed that the cleantech focus helps to distinguish La Kretz from other innovation centers, the original concept that the project would be part of a broader, cluster-driven economic initiative—the Cleantech Corridor—rather than a one-off building would have been more compelling. Although there is considerable energy and momentum within the campus, it has not had a ripple effect on the adjoining community. Instead, market forces related to the Arts District's success appear to be taking over.

Keri Lee



Continuity of leadership and support from city government, a utility company, local research universities, and entrepreneurs made the project possible.

RELATED RBA WINNERS

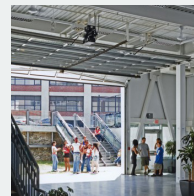
Over the years a number of RBA winners have addressed entrepreneurship and workforce development. Many, like La Kretz, target a specific sector, such as arts and design or food service, or a specific audience, such as entrepreneurs, youth, or adults reentering the workforce after homelessness or incarceration. Whatever its particular focus, each project embodies a broader vision of empowering residents and inspiring social and economic change in its community.



INSPIRATION KITCHENS—GARFIELD PARK in Chicago (2013 Gold Medalist) is a restaurant and food service training facility offering healthy and affordable meals. The renovated warehouse has become a popular gathering spot while the award-winning food service training program provides life-changing opportunity and counseling services for people struggling with poverty and homelessness.



THE STEEL YARD in Providence, Rhode Island (2013 Silver Medalist) is the redevelopment of a historic steel fabrication facility into a campus for arts education, job training, and small-scale manufacturing. The campus has become a hub for creative activity, offering classes, fabrication space, and events that bring together a variety of people from across the community.



ARTISTS FOR HUMANITY EPICENTER in Boston (2007 Silver Medalist) empowers underserved youth with paid art apprenticeships that build confidence, creativity, and workforce readiness skills. The 23,000 square-foot LEED Platinum-certified center is a full-service art and design business employing over 250 teens annually in creative and visual arts apprenticeships.

Other related RBA winners include The Bruce C. Bolling Municipal Building in Boston (2017 Silver Medalist), which also includes a business and technology incubator, and Greenpoint Manufacturing and Design Center in Brooklyn, NY (1995 Silver Medalist).

More information about these and other RBA winners can be found at www.rudybruneraward.org.

Resources

This case study was compiled from information gathered from the project application; an extensive site visit in February 2017 by Simeon Bruner, Jay Farbstein (lead author), and Anne-Marie Lubenau; and research and interviews conducted during these processes and throughout the writing and editing of this book. Titles and positions of interviewees and URLs listed below were effective as of the site visit unless otherwise noted.

INTERVIEWS

City Agencies

Steve Andrews, Senior Policy Advisor, Mayor's Office (formerly Chief of Strategic Planning for the CRA/LA, then Senior Manager of Development for the Mayor's Office)

Sharon Gi, Senior Planning & Development Manager, Kamehameha Schools (formerly Assistant Project Manager, Downtown Region for the CRA/LA, then independent consultant to LADWP)

Alex Paxton, then Project Manager, CRA/LA

Rick Fisher, Landscape Architect, City of LA, Bureau of Engineering, Architectural Division

LADWP

John Chen, Executive Director, Customer Service (formerly Director of Economic Development from 1999 to 2008)

Kelli Bernard, CEO, AECOM Los Angeles (formerly Director of Economic Development for LADWP (after Chen) then Deputy Mayor of Economic Development for the City of Los Angeles)

Terry Brungard, Manager, Efficiency Solutions Engineering Group

Private Funder

Linda Duttenhaver La Kretz, COO, La Kretz Foundation

Design

John Friedman, Principal, John Friedman Alice Kimm Architects

Alice Kimm, Principal, John Friedman Alice Kimm Architects

LACI

Fred Walti II, President and CEO

Neal Anderson, COO

Ben Stapleton, Director of Operations

Estelle Reyes, Director of Community Engagement

Mike Swords, VP Government Relations (formerly VP Partnerships)

Laurie Peters, Communications Director

LACI Tenants and Portfolio Companies

Dominique Hargreaves, USGBC

Drew Shula, Verdical Group

Max Aram, Pick My Solar

Romel Pasqual, CicLAvia

Lauren Gropper, Repurpose

Community

Laura Velkei, Arts District Community Council LA (founder)

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OTHER AWARDS

The project has been recognized with other design and construction awards including the following:

- 2014 Los Angeles Sustainability Collaborative Start-up of the Year
- 2016 AIA/LA COTE LA Award, Citation
- 2016 Interior Design Best of Year Honoree
- 2016 Engineering News-Record California Best Regional Projects, Award of Merit: Green Project
- 2016 Southern California Development Forum Design Award, Civic Category
- 2017 Los Angeles and Mexico City Sustainable Real Estate Award
- 2017 Los Angeles Downtown News Downtowners of Distinction Award