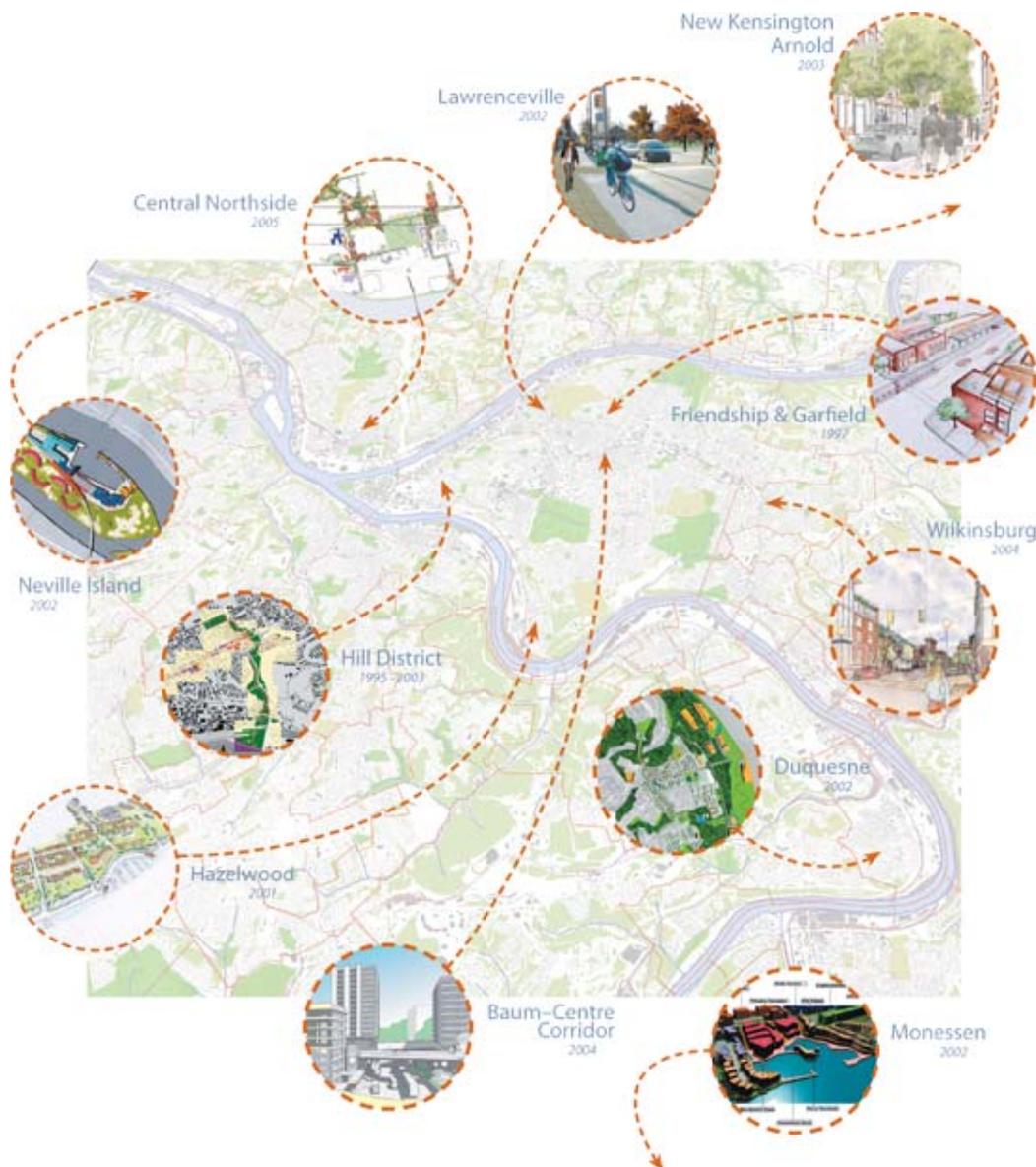


The Urban Lab: A core curriculum of Carnegie Mellon University's School of Architecture

An Introduction to the Urban Lab

For over fifteen years Carnegie Mellon University's Urban Laboratory has served as an interdisciplinary educational and outreach program. A required fifth-year urban design studio within the undergraduate Bachelor of Architecture program, the Urban Lab has sought to expand the education, community visioning, and research efforts of the university to catalyze revitalization of Pittsburgh urban neighborhoods. Every year, teams of students and faculty from the School of Architecture and the School of Public Policy and Management work with Mayors and elected officials, public agencies, private investors, and citizens of communities to collectively envision physical change within their neighborhoods and communities.



The most distinctive characteristic of the Urban Lab is the realization that urban visioning must be interdisciplinary and hands-on. Public participation has emerged as a key factor in urban design in the last twenty-five years of practice in the United States. Most public participation processes engage citizens for the duration of the planning process, expanding the range of concerns addressed, and iteratively improving the quality of design. There has

been less progress in instituting established mechanisms for empowering citizens to guide and shape the growth of their environment over the long term. In the best cases, a design process with public engagement leads to long-term citizen engagement. For all concerned, the Urban Lab is “learning by doing.”

Since 1990, the Urban Lab faculty and students have worked with over twenty Pittsburgh neighborhoods in mapping, analysis and visioning efforts. In addition to reports that capture the visionary designs developed together between students and community members, the experience illustrates to students the role of the designer as an agent within the broader public/private field and leaves behind a community group trained on participatory design processes and ready to tackle the challenges of implementation through further collaboration with professionals, political leaders and private stakeholders.

Urban design as participatory design

I know of no safe depository of the ultimate powers of society but the people themselves; and if we think them not enlightened enough to exercise their control with a wholesome discretion, the remedy is not to take it from them, but to inform their discretion.

Thomas Jefferson

Urban design is a discipline in which service is ingrained both in its pedagogy and professional practice. Urban designers recognize many of the same critical social issues that educators, sociologists, and public administrators address through their work: inadequacies in public education, substandard housing conditions, crime, the high rates of diabetes and obesity in low income communities, etc. With many social problems linked to the physical environment, the urban designer must seek to address the situation from a “bottom-up,” not a “top-down” approach.

The roots of the Urban Laboratory can be found in the social movements of the 1950s and 1960s, which propelled the severity of many urban conditions into the public spotlight. It was at this time that many residents and local professionals seized roles as advocates for social and physical reform of cities. Recognizing the need for a localized approach to reform, and the diminished capacities of city government alone to address the rampant issues at hand, programs focusing on community-based reform took hold. While initiatives such as the American Institute of Architect’s R/UDAT program (Regional/Urban Design Assistance Team), initiated in 1967, and community action programs helped establish the ability for local agencies to address urban issues, many individual planners and architects also began to take more of an advocacy role. At that time, planning decisions were typically made by power brokers who were remote from the local traditions and the hopes of the people whose lives they affected. The resulting failures of top-down design and planning were particularly significant in calling attention to the importance of citizenship in design and planning related fields. The field of urban and civic design thereby emerged from this advocacy spirit.

With the rise of service learning in universities and federal agencies to support specific programs, urban design studios have been a common type of outreach-oriented design studio. Many programs such as the East St. Louis Action Partnership at University of Illinois-Champaign-Urbana and the Yale Urban Design Workshop have engaged students, faculty, and local communities in participatory processes to develop and implement real-life community projects. The visible benefits of such programs are the actual built products, with the less visible but broader impacts being the educational benefits to students, faculty, and communities at large.

The Urban Lab's model was (and continues to be) based on the empowerment of grass roots efforts to develop alternative visions for Pittsburgh's future. Its process mediates the interaction of communities and different stakeholders and expert advisors striving to produce maximum consensus around an urban and community design proposal. Without being direct providers of technical assistance for communities, the Urban Laboratory has used the educational qualities of the urban design studio to build long-term university-community partnerships and ultimately build the capacities of communities to be their own drivers of change. The program has proven to be a successful partner with key Pittsburgh leaders in leveraging the energy and creativity of its' outstanding students to lay the foundation for professional engagement. On one hand, students complete some of the time-consuming development of basic documentation for the project, while allowing communities to affordably explore a range of design ideas and implementation alternatives. On the other hand, the Urban Lab's public process generates strong enthusiasm, and leaves behind a core group of citizens that is better prepared to engage in the future implementation process.

Communication as integral to the academic process

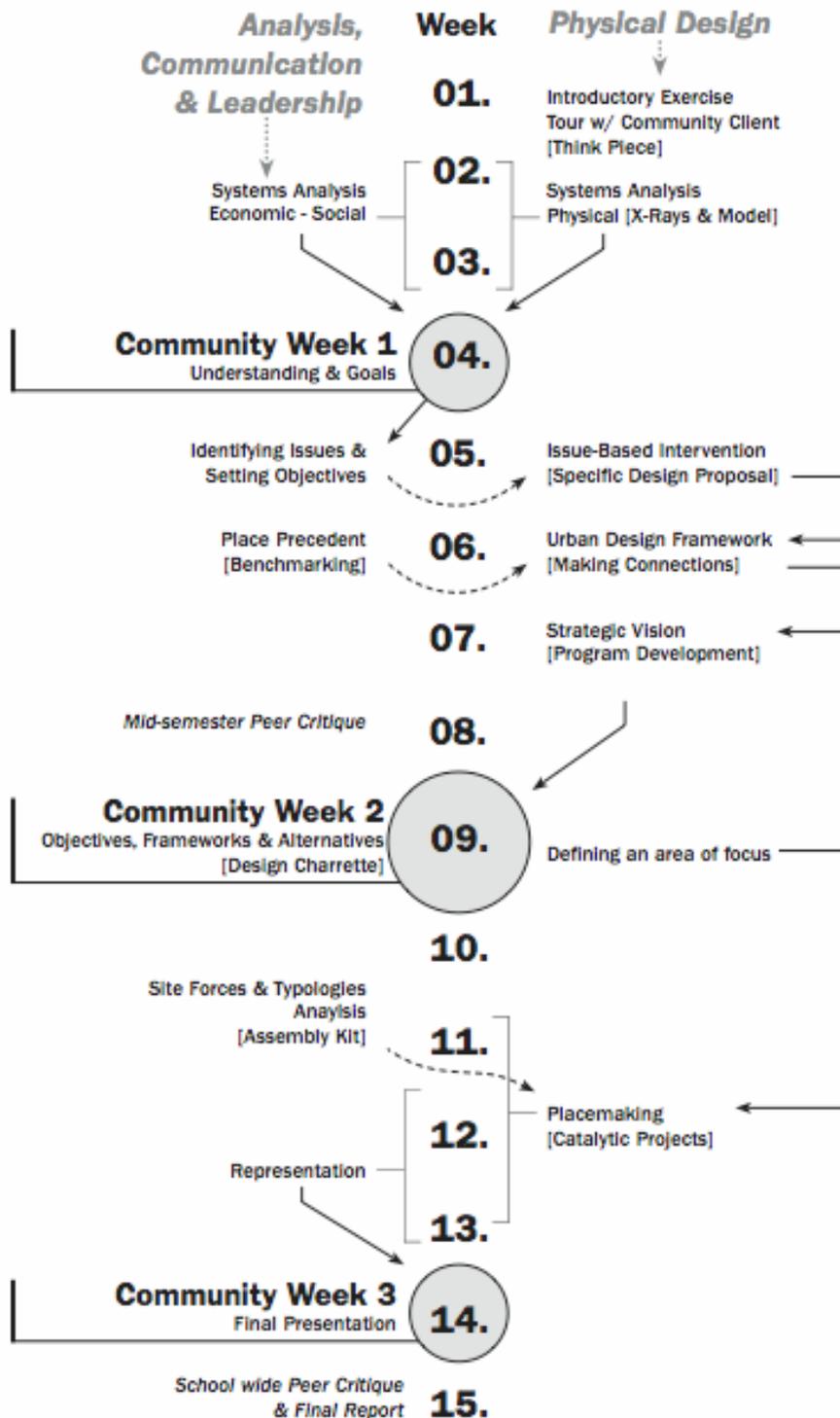
The Urban Lab studio at Carnegie Mellon seeks to educate architects to be leaders for vision-based change at the scales of neighborhood, city and region. It is intended to both introduce students to urban design and inform their understanding of building design in relation to existing neighborhoods. Our approach to urban design engages the city as an integrated design problem that is best solved through a participatory design process. Based on active public participation of citizens and major stakeholders, the Urban Lab is a hands-on experience in urban design.

Equally important to introducing the participatory process in urban design, the Urban Lab also introduces the importance of collaborative, multi-disciplinary design and decision-making. It is critically important for emerging specialists from a range of disciplines – urban design, urban economics, social sciences, history, transportation engineering, environmentalism, demography and public policy – to be trained to work in teams. Urbanists are at once generalists and specialists with their own fields of expertise. They are professionals who are able to work together in interdisciplinary teams to develop and recommend comprehensive public policies and designs for the evolution of the built environment. Drawing from multiple disciplines, students study and experience the process of working directly with communities to create visions for future change. Accountability is a crucial component, and interdisciplinary graduate and undergraduate teams work “hands-on” in local urban communities. Every Urban Lab studio project engages real neighborhoods and communities. Student teams learn to work with mayors, councils and other elected officials; agency representatives at local and state levels; the investment sector and citizens, to define issues and establish goals. Student teams are part of the University's mission to contribute positively to a sustainable future for the Pittsburgh region.

Our urban design pedagogy is a continued attempt to construct and maintain a shared conception of a problem that in turn becomes fertile ground for creativity. In creating spaces where stakeholders talk about the city, urban design becomes a collaborative task. Bringing many different points of view to light and trying to create a shared understanding among all stakeholders can lead to new insights, new ideas, and new artifacts. Processes that allow owners of problems to contribute to framing and solving these problems support social creativity.

The Urban Lab process

Communication theory helps us translate this notion of the profession of Urban Design into a process that can be embedded in the curriculum. We equip our students with a methodological understanding of group dynamics that promotes the expansion and superimposition of the frames of reference of the different participants, creating a shared “common ground” where solutions can be explored collaboratively. The Urban Lab follows a rigorous fifteen-week process structured around three major community design workshops. The studio exercise sequence is a cumulative feedback loop that leads to a detailed and nuanced urban design vision over the course of a semester:



- The initial phase in the process, *Analysis*, establishes a common ground for the participants to include a mutually acceptable representation of the problem(s). This phase begins with students completing a multidisciplinary analysis of the different economic, social and physical layers of the community, through diagrams, photographs, maps and models. It culminates in a first community workshop where students present their analysis to participants to essentially ask if they've got it right, followed by a dialogue with participants to identify community issues and objectives. Using a neighborhood map or model, a hands-on exercise utilizing an amended version of a SWOT analysis (a strategic planning tool used to evaluate the Strengths, Weaknesses, Opportunities, and Threats) assists to collectively create an in-depth graphic reference.
- The goal of the second phase, *Urban Design Frameworks*, is to expand the common ground of the participants to accommodate mutually acceptable representations of the solution(s). The curriculum focuses on urban design frameworks, with groups of two to three students transforming community issues and objectives into urban design proposals at the masterplan scale. This phase culminates in a second community meeting or design "charrette" when preliminary masterplans are presented and refined collaboratively. Participants contribute to this phase by contrasting the shared understanding of the problem with their individual beliefs and areas of expertise, contributing their knowledge and/or experiences relevant towards the solution. Dialogue during the charrette results in a key catalytic area of focus for each student group to investigate during the next stage of the design process.
- The final and third phase, *Place Making/Visionary Projects*, centers on the students development of a single area of focus in detail, exploring development typologies, three-dimensional place making, and urban design representation, resulting in the design of a catalytic project. Projects are presented at a third community meeting or reception, where feedback and evaluation are essential. This process results in a third expansion of the common ground, result of the inclusion of actual representations of the solution. Both successful and unsuccessful components of proposals, along with their evaluations, become building blocks for the community.

It is very important to understand that this process does not happen sequentially. The three processes of common ground expansion can emerge episodically at any time. The process encourages a continuous and collaborative feedback loop.

Skill development goals

Community Leadership

- Gain experience working with a diverse community to understand issues, listen to ideas, summarize principles and communicate design intent
- Understand the basic sociological dynamics of urban communities
- Understand the importance of democratic involvement of a diverse array of community stakeholders in the planning process
- Understand the basics of creating and running a community planning process

Urban Planning & Development:

- Understand systems of policy, economy, transportation and environment at multiple scales
- Understand the role of urban planning and public policy in the creation and regulation of the built environment
- Understand the connections between regional land-use issues and neighborhood planning

- Understand the basic strategies of community economic development

Architecture & Urban Design

- Expand design skills to address how buildings reinforce surrounding neighborhoods
- Understand the use of buildings to define public urban space
- Understand the use of repeated building typologies to create blocks and neighborhoods
- Understand relationships between architectural expression and place making
- Understand the strategic use of architecture for community vision building & revitalization

Public Space Infrastructure & Landscape Design

- Expand design skills to address problems involving the creation of outdoor public space
- Understand the role of landscape architecture in urban design
- Understand the use of landscape typologies to create diverse public spaces
- Understand relationships between environmental systems and urban systems
- Understand the basic design of street typologies and transportation networks

The Urban Lab projects

The fall 2006 Urban Lab consisted of four studios, with ten to twelve students each, and two diverse projects. While all studios shared the same pedagogy, the projects involved different stakeholders, communities, sites and programs.

Two studios collaborated with Pittsburgh North Side communities and the Pittsburgh Children's Museum in correlation with a project funded by both a National Endowment for the Arts grant and a Heinz Endowment grant. These grants sponsored an international ideas competition, "The Charm Bracelet Project," which sought to create linkages among the varied cultural, educational and entertainment destinations of the North Side. At the launch of the competition, the Urban Lab students shared their site analysis and community dialogue with the four selected international design teams. Throughout the semester, students participated alongside the professional design teams, undergoing their own design inquiries which included linkages through family oriented housing, cultural, and institutional projects. Both professional and exemplary academic design work of the Charm Bracelet Project were exhibited at the Children's Museum in the spring of 2007. Student work is highlighted in a publication.

The other two studios collaborated with the Pittsburgh Urban Redevelopment Authority (URA), the Urban Land Institute (ULI) and community groups in conjunction with a ULI grant which focused on two blighted urban corridors within Pittsburgh: Brighton Road in the North Side, and Herron Avenue in the Hill District. While not program specific, these studios were site specific, focusing on the issue of vacant land and yielding such programs as urban farms and public art corridors. The student work has been highlighted in a publication, and featured in local newspaper articles and presented at the Pittsburgh Urban Land Institute Vacant Lots symposium as examples of strategies for the reuse of vacant lots. In a second phase follow-up to the original grant project, the URA, in conjunction with continuing student participation, aims to develop specific RFP's for selected sites as defined in the project.

The Charm Bracelet Project

The North Side is the term Pittsburghers use to collectively describe the eighteen neighborhoods that wrap around the flat northern banks of the Allegheny and Ohio Rivers and extend upward to the hillsides. Most visitors trek to the North Side to experience Pittsburgh's celebrated cultural, educational and entertainment destinations from the Mattress Factory Museum to the Carnegie Science Center to Heinz Field, home of the famous Pittsburgh Steelers football team.

Regrettably, these destinations are physically disconnected and experientially isolated from one another. Fortunately, these destinations exist among historic neighborhoods, urban park space, and local restaurants and street vendors, offering a strong foundation for connectivity.

The semester-long studio schedule was structured in three phases: analysis, urban design frameworks and place making/visionary projects, with each phase culminating in a community meeting involving presentations and feedback sessions. The meetings offered the students the opportunity to engage with community stakeholders and residents of the North Side, to assess community needs, and to discuss student proposals. Community leadership skills and social and ethical responsibility were developed as meetings are advertised, planned and facilitated by the students. An added benefit occurred as the students served as liaisons between the professional design teams and the community, discussing the broader goals and public benefit of urban design.

During the course of the studio, students had the opportunity to interact with the following professional design firms: Suisman Urban Design, Santa Monica, CA; Colab Architecture, Ithica, NY; muf architecture art, London; Pentagram Design, NY, NY. In addition, local stakeholder interaction included: Pittsburgh Department of City Planning; Urban Redevelopment Authority; East Liberty Development Inc.; Community Design Center of Pittsburgh; Urban Design Associates; and the Northside Leadership Conference.

The exemplary urban design project of students Lauren DiStefano & Dan Tse, titled *North Side Boulevard*, serves to demonstrate the overall process and objectives of the Urban Lab curriculum.

This proposal focuses on restructuring North Avenue, which serves as a main east-west connection between disparate North Side neighborhoods. By claiming a sliver of the existing park's northern edge, the potential for a formal boulevard is posited, and then formalized through a careful study of paving patterns, street furniture and tree types.

Many of North Avenue's vacant buildings are built of quality materials and evoke days of North Side pride. The re-use of these buildings serves to renew the vitality of this corridor. In addition, proposed "green" buildings on the south side of a new North Avenue boulevard create a dialogue with the restored buildings on the northern side. This strategy places active functions on both sides of the park, allowing for passive observation and surveillance of the park, and ultimately increasing property value.

The final phase of this project proposes the reconnection of north-south Federal Street through Allegheny Center, a failed urban renewal scheme of the 1960's. This small gesture creates a big movement. When reconnected into the city fabric, with integrated vehicular access and an abundance of public amenities and spaces, residents in and around Allegheny Center are provided with access to the true center of their neighborhood once again.

Brighton Road and Herron Avenue Projects

Studios collaborating with the Pittsburgh Urban Redevelopment Authority (URA), the Urban Land Institute (ULI) and community groups in conjunction with a ULI grant focused on two blighted urban corridors within Pittsburgh: Brighton Road in the North Side, and Herron Avenue in the Hill District.

According to the Brookings Institution, vacant and abandoned properties occupy about 15 percent of the area of the typical large city. As pointed out by the National Vacant Properties Campaign, “this is abandoned properties connected to urban infrastructure”. During the past five decades Pittsburgh population has declined by half leading to large-scale abandonment of previously productive properties. The City of Pittsburgh has seen a decline in population from a high of 676,806 in 1950 to 334,563 in 2000; recent estimates appear to indicate that the decline has continued during the past six years. Regardless of Pittsburgh’s exact population today, it is clear that we are now a City approximately half the size we were a half a century ago, at least in terms of the number of people living here. Even though the average household size has decreased, the number of structures needed to house our population is continually declining.

Though a declining population is not the sole reason for the increased number of vacant structures it is certainly a major contributor and the number of vacant structures in Pittsburgh is increasing despite what has been a fairly aggressive demolition program by the City. During the past decade, approximately 300 structures have been demolished each year. The annual cost of these demolitions has varied between approximately \$1.5 million and \$2 million. During these same ten years approximately 300 structures have been condemned, i.e., scheduled for demolition. Unfortunately, there has also been an inventory of 1,200 vacant structures that has remained fairly stable. Since resources available to the City to carry out these activities have declined, it has been difficult to demolish more structures than become vacant. Therefore, the blighting influence of the vacant structures continues. Two formerly vital commercial districts in Pittsburgh neighborhoods, one on the North Side and the other in the Hill District, illustrate this issue, which many older U.S. cities currently face. The North Side example – the Brighton Road Corridor – features an area that contains many privately owned properties that are vacant and abandoned, while the Hill District example – the Herron Avenue Corridor – is mostly comprised of vacant lots owned by the City’s Urban Redevelopment Authority. Regardless of the ownership, these under-utilized properties are a negative influence in their respective neighborhoods and are a liability rather than an asset. As part of a broad and inclusive planning process, a study of these two sites provides valuable case studies, which are, in turn, useful in producing broader strategies for revitalization and reuse in similar situations. The ULI Community Action Grant has been used to conduct feasibility studies for the area in order to synchronize community priorities, determine market potential and create overall development strategies as well replicable models.

Brighton Road is a main thoroughfare through the North Side, bordered by some of the City’s wealthiest residents and some of its poorest. Million-dollar renovated Victorian mansions near crumbling structures home to rodents and junkies, gleaming new stadiums, and a generation of young people who have little hope for their futures. The Brighton Road study area provides an opportunity to bring together a diverse collection of residents and neighborhoods that are too often isolated from one another.

The five neighborhoods impacted by the Brighton Road Corridor have actually experienced a population decline that exceeds the rate of the entire city, e.g. during the past five decades total population for these neighborhoods has declined from a high of 45,699 residents to 12,463, a loss of over 72%. With this population loss has come an increase in the number of

vacant structures. Overall, Pittsburgh maintains an average vacancy rate of 12.0%, but in these five neighborhoods of the 6,792 residential properties, a full 1,377 stand vacant. This number represents a vacancy rate of 20.3%

The exemplary design project completed in the fall of 2007, titled *A-GROW-ING Community*, by students Nina Barbuto, Adam Hall, Jenna Kappelt serves as a reference to the Urban Lab's participatory process through the engagement of Pittsburgh communities.

The site for this project focuses on a 1.5-mile stretch of Brighton Road leading from the Community College of Allegheny County up the hill to Uniondale Cemetery. This stretch of Brighton Road currently acts as a perceived dividing line between neighborhoods.

The initial analysis conducted depicts the different factors that impact the area. Forces such as Summer Shadows, Winter Shadows, Paving, Green Spaces, Architectural Analysis, Building Footprints, Road Networks, Watersheds and Slope Severity all played roles in informing the design decisions and suggested the potential for large-scale urban agriculture.

The community expressed interest in healthy food options within their own neighborhood. In order to buy fresh produce, meats and baked goods, residents currently must take a bus out of the city to a suburban grocery store. The combination of the community's desire and the initial analysis led to the formation of a plan that incorporated an urban farm and an accompanying food cooperative. Food grown and sold in the neighborhood could result in pride of ownership and a unified community.

Without the ability to infill the entire area with housing as it was fifty years ago, new ideas involving natural systems were introduced. The public has been extremely receptive, with residents of the area now initiating urban agriculture and a food co-op in the neighborhood.

A newspaper article in the Pittsburgh Post-Gazette, titled *CMU plans upgrades for Herron, Brighton corridors*, written by Diana Nelson Jones on Tuesday, December 12, 2006 stated, "Brighton Road and Herron Avenue got bright outlooks yesterday when Carnegie Mellon University architecture students unveiled dream schemes for enlivening the corridors to public officials and neighborhood advocates Downtown. Mayor Luke Ravenstahl pledged "to help make these drawings come to fruition," and although full fruition would be many years away, some ideas can be implemented as quickly as "within maybe six months," said city Planning Director Patrick Ford. Mr. Ford seized on public art as most immediately possible. "We're beginning a public-art agenda" in 2007 "and I have funding for a public art manager," he said. "We have the opportunity now to look at some of these critical areas" -- places where public art could help spur development."

The future

The ability to document and evaluate the condition of neighborhoods and regions and to envision their regenerated futures are the primary goals of the Remaking Cities Institute. Building on over fifteen years of successes in the Urban Laboratory, the Remaking Cities Institute is being created to ensure and expand the education, community visioning, and research efforts of Carnegie Mellon University; and to strengthen its partnerships in the Pittsburgh Region to catalyze the revitalization of urban regions, neighborhood by neighborhood. The mission of the Remaking Cities Institute is to catalyze sustainable urban futures and excellence in community design. Our mission is to be recognized internationally as the key resource for rebuilding urban communities, demonstrated through the revitalization of communities in the Pittsburgh region.

Ensuring sustainability and quality of life in urban and regional design requires both multidisciplinary expertise and exposure to participatory processes. Physical decisions about

land-use, zoning, transportation and other infrastructures, mixed-use development, and neighborhood design are brought together with urban geography, economics, and policy at the core of the Institute. The centerpiece is a group of students and faculty from different disciplines working with neighborhoods, and political and economic decision-makers, to address the complex and multidimensional nature of sustainable cities and regions. RCI benefits from the strength of the Center for Economic Development (CED), part of the H. John Heinz III School of Public Policy. The seamless integration of their expertise in the work of RCI allows us to leverage academic resources to better understand key regional economic development issues.

*Under the umbrella of the Remaking
Cities Institute the work of the Urban Lab
will have greater impact in the region.*



The Charm Bracelet Project Instructors

Kelly Hutzell is the Lucian Caste Chair Visiting Assistant Professor. She has a BArch and an MS in Architecture and Urban Design and has worked as a designer for offices that specialize in academic and cultural urban buildings. In addition to teaching, Kelly currently works for the firm over,under.

Dan Rothschild and Ken Doyno are principals of Rothschild Doyno Architects, a Pittsburgh based architecture and urban design firm whose sketchbook design process focuses on collaboration, exploration and communication.

Brighton Road and Herron Avenue Project Instructors

Rami el Samahy is a principal of over,under, a multi-disciplinary design studio based in Boston, Massachusetts with projects in the United States, Guatemala and Egypt. The work ranges from urban design and architecture, to interiors and graphic design. Rami holds degrees in Architecture, International Relations and Near Eastern Studies.

Luis Rico-Gutierrez is Associate Dean of the College of Fine Arts. He has been involved in leading and teaching the Urban Lab for the past ten years, working intensely with Pittsburgh communities such as the Hill District.