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The Remaking Cities Institute

School of Architecture

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Carnegie Mellon School of Architecture
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cities
EXECUTIVE SUMMARY

Mission, Vision & Goals

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Curriculum Development
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International Partnerships

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History of the Urban Lab
Why is RCI Needed?
Why CMU & Why Now?
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The mission of the Remaking Cities Institute is to catalyze sustainable urban futures and excellence in community design.

The five-year vision of the Remaking Cities Institute is to be recognized internationally as the key resource for rebuilding urban communities, demonstrated through the revitalization of communities in the Pittsburgh region.
Building on over 15 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 Remaking Cities Institute is focused on three critical and interrelated areas: Education, Regional Impact, and Research.
The chapter on education that follows this executive summary will illustrate the power of our existing Urban Lab and the opportunities of our Master of Urban Design (MUD) and other educational programs. With the support of a Heinz Foundation planning grant, fourteen educational modules have been codified for educators world-wide. This on-line curriculum identifies key learning objectives, skills and tools, as well as goals and powerful deliverables for the collaborative designing of neighborhoods - working together with communities and their leaders.

Remaking Cities through Education:
to define, teach & create

The Remaking Cities Institute will be the premier resource for educating and empowering professionals to catalyze quality community design and revitalization.

In the past 15 years, more than 700 architecture and planning students have been educated to believe that their leadership and design skills are central to the revitalization and success of communities. Many from suburban backgrounds, these students have fallen in love with the ethnic, pedestrian, ‘whole life’ neighborhoods in older cities, and graduated into urban practices dedicated to remaking these cities. The chapter will outline the potential of our MUD program, emerging partnerships with other educational units, including Oxford (UK) and Monterrey Tech University, and the potential for a multi-disciplinary, multi-campus PhD program. An endowed Remaking Cities Institute is central to bringing leading professionals and visionaries to teach in this program, and to continuously renewing educational curricula.
Left: Urban Laboratory students in a workshop with Northside community members.
Below Left: Students learn to see the urban environment as a complex set of interlocking systems.
Below: Studio pedagogy is structured around a series of community workshops culminating in a final report.

Project Flowchart

Analysis, Communication & Leadership

Studio Exercise Sequence: Creating Visions for Change

The studio exercise sequence is a cumulative feedback loop which leads to a detailed and nuanced urban design vision over the course of a semester. The project has three phases with a community workshop at the end of each phase. The analysis phase is dedicated to examining economic, social and physical layers of the community through words, images, maps and models. In the first community workshop, the analysis is presented and students work with participants to identify community issues and objectives.

The second phase, urban design frameworks, transforms the community issues and objectives into a series of urban design proposals culminating in a strategic vision for the neighborhood. The second community workshop functions as a design charrette to refine design ideas and select a key catalytic area of focus for further design inquiry. The final phase develops the area of focus as a catalytic project for the community through a detailed three-dimensional urban placemaking study. The final community workshop is used to summarize and present the work and to discuss next steps for the community.

Community Workshop 1
Understanding & Goals

- Systems Analysis: Economic-Social
- Identifying Issues & Setting Objectives
- Place Precedent (Benchmarking)
- Defining Strategies (Guiding Policy)

Mid-semester Peer Critique

Community Workshop 2
Objectives, Framework & Alternatives

- Design Charrette
- Catalytic Precedent (Benchmarking)
- Identifying Typologies (Assembly Kit)
- Representation

Community Workshop 3
Final Presentation

- Final Report
- School-wide Peer Critique & Final Report

Systems Analysis: Physical (3-Days & Model)

- Physical Design
- Strategic Vision (Program Development)
- Site Forces Analysis (Site Planning)
- Placemaking (Catalytic Interventions)

Issue-Based Intervention (Specific Design Proposal)

Urban Design Framework (Making Connections)
Remaking Cities through Community Visioning: to lead, participate & vision

The Remaking Cities Institute will be a leader in community visioning for revitalization in the Pittsburgh region, collaborating to ensure the tipping point for reversing sprawl and rediscovering community.

The chapter on visioning captures over fifteen years of accomplishment in the Urban Lab, as well as the strategic potential to be more integral with our region's political, foundation and industrial leadership activities in revitalizing the Pittsburgh Region. Through the Urban Lab studio, Carnegie Mellon students and faculty have been ambassadors in Pittsburgh's neighborhoods, providing visioning skills while learning about cities. Working from campus studios and occasionally storefront workshops, the students create rooms of drawings and models to envision how design can heal communities. Each studio compiles a visioning report to leave with the community, many now captured on-line with support from the Heinz Endowment planning grant.

Unlike the Design Center in smaller Chattanooga, however, the Urban Lab studios have not been fully integrated with other neighborhood and regional initiatives of city and county government or private foundations and industry. Moreover, the massive creative output in research, drawings, models, shows and reports have no permanent residence, which would provide an invaluable basis for subsequent efforts by communities. Indeed, the Remaking Cities Institute hopes to create a visually and educationally rich ‘storefront’ and ‘participatory toolbox’ for visioning workshops, full of digital and physical archives drawn from the entire design community who have contributed to neighborhood visioning efforts. The benefits of these efforts would extend far beyond Pittsburgh, however, since the challenges to urban revitalization in this region, the analysis and visioning tools, and the solution sets, have meaning for cities worldwide. An endowed Remaking Cities Institute is central to continuing the participatory outreach efforts of Carnegie Mellon students and faculty, to offering early visioning support in alliance with public and private leadership, to supporting their productions and publications, and to building the urban lab ‘storefront’ and ‘participatory toolbox’ for community visioning.
Urban Laboratory Studios across the Region

Since 1990 the Urban Laboratory has generated community design visions for neighborhoods and towns across the region. The Remaking Cities Institute will build upon this legacy to catalyze a sustainable future for the region.
Remaking Cities Research: to discover, quantify & invent

The Remaking Cities Institute will be a world-class developer of community visioning and revitalization tools, as well as economic, health and quality of life proof sets defining livable communities.

The chapter on research will introduce three areas where Carnegie Mellon expertise can transform education, policy and practice in Remaking Cities: Visioning tools and case studies; Healthy and high performance communities and cities; and Innovative design and urban system integration for quality of life. The power of computational tools is transforming practice, and RCI faculty are leaders in the use of GIS tools in urban decision-making. Carnegie Mellon should be leading the development of new tools for design visioning: tools to reveal interdependencies, analyze and synthesize; tools to link case studies and environmental, census, and photographic data bases to early design and revitalization decisions; tools to vision with linked analyses.

Explorations in the linkage of the physical design and condition of neighborhoods and cities to human health, environmental quality, economic growth, and other performance metrics is another area of research uniquely suited to the skills of CMU and Pitt faculty working together. Ecology, health, and a shared quality of life are inextricably linked to the fabric of our communities and cities – relationships that still need to be described and proven.

Finally, the opportunity to lead in design and engineering innovation, including systems integration that crosses disciplinary boundaries – such as addressing storm/sewer crises with infrastructure, land use and landscape innovation – will be discussed. An endowed Remaking Cities Institute is central to supporting the multi-disciplinary faculty efforts key to these research areas, and to supporting Masters and PhD students in exploring thesis topics of critical local and global concern that are still outside of national funding streams.
The Structure of the Remaking Cities Institute

The Remaking Cities Institute is intended to provide the institutional leadership and the base of sustaining resources for the educational, visioning, and research efforts of faculty and students dedicated to the revitalization of communities and cities. The multi-disciplinary CMU faculty who are central to this proposal are profiled in chapter 5, along with a delineation of the academic partners in Pittsburgh that will be invaluable. The chapter identifies the local governmental and non-profit organizations that are key to ensuring that the efforts of the RCI initiatives are central to collaborative decision-making and to eventual action. With support from the Heinz Planning Grant, a regional and international board has been identified and profiled. A near term vision of the physical home of the Remaking Cities Institute, given institutional and resource constraints, is profiled. Finally, a budget for the basic dispensation of an endowment for the Remaking Cities Institute is profiled. The educational, research and outreach commitment of one of this nation’s leading universities to the revitalization of cities and communities – locally and globally - should be structurally and economically ensured.

Conclusion

The Remaking Cities Institute will catalyze sustainable urban futures and excellence in community design. The Remaking Cities Institute will be the premier resource for educating and empowering professionals to catalyze quality community design and revitalization. The Remaking Cities Institute will be a leader in community visioning for revitalization in the Pittsburgh region, collaborating to ensure the tipping point for reversing sprawl and rediscovering community. The Remaking Cities Institute will be a world-class developer of community visioning and revitalization tools, as well as economic, health and quality of life proof sets defining livable communities.

We feel that no effort could be more aligned with the goals of the Heinz Endowments as stated:

The Heinz Endowments supports efforts to make southwestern Pennsylvania a premier place to live and work, a center of learning and educational excellence, and a home to diversity and inclusion. Committed to helping its region thrive as a whole community – economically, ecologically, educationally and culturally – the foundation works within Pennsylvania and elsewhere in the nation to develop solutions to challenges that are national and even international in scope.
Recent student work by Sae-Mi Lee, Benjamin Straus, Xian Huay, and Gary Tsai envisioning a revitalized Central Northside. After an analysis of surrounding streets and activity levels (above), the proposal re-introduces streets and mixed-use buildings into Allegheny Center. New buildings are introduced which re-use existing parking infrastructure while knitting the center of the Northside back together.
The Remaking Cities Institute will be the premier resource for educating and empowering professionals to catalyze high-quality community design and revitalization.

A top priority of the Remaking Cities Institute is to train a new generation of urbanists. Urban design is the art of designing great cities and beautiful urban spaces that express the culture and life of communities and reflect the environment that sustains them. By educating and empowering qualified professionals, the Remaking Cities Institute will catalyze sustainable urban futures and become a global leader in the practice and promotion of participatory, community design. Multi-disciplinary design is Carnegie Mellon’s distinctive capacity. Our curriculum includes: history, theory and methods of urban design; public participatory process and community design; social, economic and environmental aspects of urbanism; and policy and finance mechanisms for transforming cities.
Carnegie Mellon has four degree programs with a focus on urbanism, with 10 full-time and 8 adjunct faculty, 50 or more students each year, and a rich array of courses focused on the potential of remaking cities. The curricula of the Bachelor of Architecture, the Master of Science in Public Policy and Management (with urban and regional development concentration), the joint Masters with Oxford University and the new Master of Urban Design are in Attachment A. The table of courses below demonstrates the breadth of curricular offerings and the availability of courses from different disciplines for both undergraduate and graduate students in urban design, economics, policy and sustainability (course descriptions in Attachment B).

Central to this curriculum is the strength of the faculty, both full time and adjunct, that is committed to teaching the Urban Lab studio and project and lecture courses across the campus (biographies in Attachment C). First and foremost, Carnegie Mellon has had the benefit of over 30 years of inspired, practice-rich, award-winning scholarship and urban leadership by David Lewis. David is a Fellow of the American Institute of Architects (AIA), winner of the AIA Presidential Citation for Urban Design and the Kemper Award, and is internationally renowned as scholar and practitioner forging methods of participatory design in the United States. He initiated the Urban Lab at Carnegie Mellon more than 15 years ago and continues to lead the fifth-year program in urban design which has contributed to neighborhood revitalization efforts throughout the Pittsburgh region. A committed new generation of faculty focused on urban issues ensures continuity in the work and impact of RCI in the region. Luis Rico-Gutierrez’s research into “visioning toolkits” for urban and community development, Kristen Kurland’s expertise in geographic information systems, and Jonathan Kline’s advocacy role and design practice form a strong foundation for addressing the challenges of the region.

The Urban Lab also benefits from the strength of the Center for Economic Development (CED), part of the H. John Heinz III School of Public Policy, first under the leadership of Richard Florida and now Jerry Paytas, with the collaboration of Robert Gradeck. The CED was established in 1987 as an applied research center designed to leverage academic resources to better understand key regional economic development issues. CED activities include technical assistance in policy and strategy to guide action, economic analysis and modeling, mapping, benchmarking, and timely analysis of key issues. Recent research has focused on solving urban issues through studying community development, the university role in economic development, technology, regional benchmarking, and issues affecting minority populations.

Finally, the ongoing partnership with the Center for Building Diagnostics and Performance, through Vivian Loftness, Steve Lee and Volker Hartkopf, adds a layer of research and expertise in the field of sustainable infrastructures hard to match anywhere in the world.
Benefiting from our location in Pittsburgh, the active involvement of local architects and urban design practitioners is a strategic advantage of education at Carnegie Mellon. In addition to Ken Doyno and Dan Rothschild of Rothschild Doyno Architects; Anne Marie Lubenau of the Community Design Center of Pittsburgh, Rebecca Flora of the Green Building Alliance; and Mulu Birru formerly of the Pittsburgh Urban Redevelopment Authority, the principals of Urban Design Associates have joined the Urban Lab as active urban leaders. In a sustaining commitment to take the baton from David Lewis, Distinguished Professor of Urban Design in the School of Architecture and founding Principal of UDA, his partners Ray Gindroz and Don Carter have joined the Urban Lab team to define the objectives of the Remaking Cities Institute, and to help plan for its sustaining contributions to the region, to education and to research.

The UDA participatory design process and extensive experience in rebuilding neighborhoods and cities are invaluable to our long term educational strength in urban revitalization.

The Urban Lab as the Centerpiece for All Four Degrees

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. The studio expands student’s design skills in architecture, urban design, infrastructure and landscape design, and introduces new skills in community leadership and urban planning. Our approach to urban design engages the city as an integrated design problem which 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 in communities in Southwestern Pennsylvania.

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.
The Urban Lab studio is intended to both introduce students to urban design and inform their understanding of building design in relation to existing neighborhoods. The first half of the semester is focused on introducing new skills of community leadership and urban planning, while the second half is devoted to expanding and developing design skills at the neighborhood and block scale.

I. Strategic and pedagogic goals for the introduction of new Community Leadership & Planning Skill Sets:

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

Urban Planning & Development
1. Gain analytical skills in understanding systems of policy, economy, transportation and environment at multiple scales
2. Understand the role of urban planning and public policy in the creation and regulation of the built environment
3. Understand the connections between regional land-use issues and neighborhood planning
4. Understand the basic strategies of community economic development

II. Strategic and pedagogic goals for expanding and building upon existing Design Skill Sets:

Architecture & Urban Design
1. Expand design skills to problems ranging from building up to neighborhood scale
2. Understand the use of buildings to define urban space
3. Understand the use of repeated building typologies to create blocks and neighborhoods
4. Understand relationships between architectural expression and place making
5. Understand the strategic use of architecture for community vision building & revitalization

Public Space Infrastructure & Landscape
1. Expand design skills to problems involving the creation of outdoor public space
2. Understand the role of landscape architecture in urban design
3. Understand the use of landscape typologies to create diverse public spaces
4. Understand relationships between environmental systems and urban systems
5. Understand the basic design of street typologies and transportation networks

Developing the Urban Lab

With support from the Heinz Foundation in 2005, the Remaking Cities Institute team worked on documenting the Urban Lab curriculum in three major stages: refining pedagogical objectives, defining the sequence of studio curricular objectives, and creating detailed teaching materials for each lab.

Pedagogical Objectives Refinement

The undergraduate and graduate studios of the School of Architecture are central to the Urban Lab and to the educational component of the Remaking Cities Institute. Three-dimensional urban design projects show how a particular community may evolve if recommended policies are carried out. It is also critical that a School of Public Policy is integrated into the Urban Lab. Urban design recommendations have to be substantiated by written, graphic and statistical analyses, and must be translated into policy and investment decisions. The Institute constructs education programs around urban design as a dramatic and holistic method of drawing several disciplines together in an atmosphere of intellectual interdisciplinary understanding and teamwork.
New curricular materials were developed for the urban lab studio in 2005, refining and building upon 15 years of teaching experience. All studios now follow a rigorous 15 week process structured around 3 major community workshops. The studio lesson sequence follows a cycle of analysis and design encouraging students to understand the built environment as a series of interconnected complex systems.

Included the University of Michigan, Harvard University, the University of Miami, the University of California Berkeley, Columbia University, the University of Colorado, the University of Sydney, Massachusetts Institute of Technology, the University of Pennsylvania and the University of Washington. In addition to programs in urban design, some urban planning programs and curricula were also examined. Jonathan Kline led a series of faculty workshops that were conducted to revisit and further develop the curriculum of the Urban Laboratory. The result of these workshops is a refined set of pedagogical objectives for the undergraduate studio shown on page 14.
Sequence of Studio Exercises

The second stage of the documentation of the Urban Lab focused on updating the existing exercise sequence of the urban design studio to match the refined pedagogical objectives. Collecting exercise examples from the last three years of studio education taught by various Urban Lab faculty, exercises were combined and rearranged to create a draft exercise sequence. Subsequent faculty workshops resulted in a rigorous set of exercises designed to teach the objectives. Particular attention was paid to redesigning the community workshops where students and community members work together to define an urban design vision. The Urban Lab exercise sequence and the pedagogical objectives for the fifth-year studio are shown on page 15.

Teaching Material Development

The final stage of the curricular development work was the refinement of a set of teaching materials for shared use in all fifth-year studios. This includes a generalized syllabus and schedule; handouts for each studio exercise detailing the objective, products and format; suggested sequential reading materials in handout form; a sequence of outlined lecture topics; and an electronic database of image examples for student and faculty use. All handout materials are designed so that they can be used with minimal modification by studio teaching faculty. Examples are shown on pages 16 and 17.
In the second half of the urban lab semester, students focus on a single aspect of their vision, connecting their skills in architecture to a larger urban vision. Students focus on site analysis, placemaking, development typologies, landscape and representation. The results of the studio are presented in a final community workshop and collected into a report.

**Other Core Curricula**

While the Urban Lab studio is the centerpiece of RCI's educational efforts, the program is equally dependent on lecture courses, electives, guest lectures, seminars, demonstrations and conferences ongoing across different colleges in the University to promote interdisciplinary knowledge-building and collaborative invention for the revitalization of neighborhoods.

In addition to these graduate programs, the Tepper School of Business has joined the School of Architecture to create a Real Estate Development class that provides strong economic analysis tools that add to the skills that our students use when working in studio, while Environmental and Public Policy's focus on sustainability provides a broad spectrum of expertise that becomes an invaluable resource for our academic and outreach goals.
**Master of Urban Design (MUD) at Carnegie Mellon & the MSc at Oxford**

The recently created Master of Urban Design is a 12-month degree program to develop physical design expertise critical to establishing new directions in sustainable community design and policy. Through a partnership with the Master of Public Policy and Management program in Carnegie Mellon's H. John Heinz School of Public Policy and Management, and the Master of Science in Nature, Society, and Environmental Policy at Oxford University (UK), the MUD prepares students to collaborate effectively in multi-disciplinary teams to address the challenges and opportunities that arise in revitalizing neighborhoods, cities and regions.

Ensuring sustainability and quality of life in urban and regional design requires both multi-disciplinary expertise and exposure to participatory processes. Physical decisions about land-use, zoning, transportation and other infrastructures, mixed-use development, and neighborhood design is brought together with urban geography, economics, and policy in the MUD degree. The centerpiece of the curriculum is the Urban Lab, a two-term neighborhood analysis and design studio in which students from different disciplines work with architects, urban designers, neighborhood, and political and economic decision-makers, to address the complex and multidimensional nature of sustainable cities and regions. The summer project course is a joint applied-research effort with Oxford University, generating case-based databases and guidelines for sustainable cities and regions.

Admission to Carnegie Mellon’s MUD program also ensures admission to the back-to-back MSc program at Oxford University. With the shared summer project course, students can achieve two Master degrees in two years at two leading institutions, preparing them to be leaders in advancing sustainable communities, cities, and regions.

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**Master of Science in Public Policy and Management with Concentration in Urban and Regional Economic Development**

This program, offered through the John H. Heinz School of Public Policy and Management, is composed of students committed to public service, or to working on issues or problems that affect the public sector. Although public policy schools were created with the goal of providing professional training for federal government officials, graduates today hold a wide variety of careers, with students finding employment at all levels of the government, non-profit organizations and private sectors in the United States and in many other countries as well. The concentration on Urban and Regional Economic Development tailors the basic policy curriculum to expose students to the relationship between quality of life issues and the built environment. The second year of the curriculum offers a wide variety of plug-in elective classes that focus on issues related to sustainability, planning, development and urban policy. The Urban Laboratory becomes the Capstone course and systems synthesis project.
The Cornerstones Symposium and the David Lewis Lecture Series

The Cornerstones Symposium brings together internationally-renowned leaders in different fields related to quality of life issues in urban environments. Cornerstones is an outreach program of the School of Architecture where faculty, staff, students and local professionals discuss issues of design, development and construction, and create new opportunities for economic growth. The organization has consolidated its role in the region as a space that promotes dialog and understanding of the many different dynamic forces crucial to enhancing quality of life in our communities. Their 2005 Symposium, "Remaking the Pittsburgh Region," gathered more than 120 design professionals, builders, developers and politicians to discuss and better understand ways to remake the Pittsburgh region by examining what other cities have accomplished and how they can work together to foster a revitalizing environment in the region. The symposium was successful in its continuing efforts to identify strategies that will assist the Pittsburgh area in accomplishing its social, cultural and economic goals in a sustainable manner.

Conclusion

The Remaking Cities Institute will catalyze a sustainable urban future and excellence in community design. Educating and empowering professionals to catalyze quality community design and revitalization is our distinctive capacity. Through the work of our students and the research of our faculty, we will become a regional and international leader in community visioning with Pittsburgh communities benefitting directly as test cases for our work. We hope that our multidisciplinary approach to the field of urban and community design will be instrumental in reversing sprawl and helping citizens of the region to rediscover community.
From 2002-2004, urban lab students have investigated the concept of a greenway connection between the Hill District and the Monongahela River following the corridor of Kirkpatrick Street. These projects have been developed in collaboration with Dennis Candy and the River Life Task Force in the Find the Rivers' program. Using the work of the lab, Find the Rivers has raised funding and hired a professional design team to develop the concept. Student work by Brent Buck, Paul Duston Munoz, and graduate students Kim Kinder & Mandy Chui.
The Remaking Cities Institute will be a leader in community visioning for the ongoing revitalization of the Pittsburgh region, supporting collaborations that can ensure the tipping point for reversing sprawl and rediscovering community.

For over fifteen years, Carnegie Mellon students and faculty in the Urban Lab have been ambassadors in Pittsburgh’s neighborhoods, providing visioning skills while learning about cities. Working from campus studios and occasionally storefront workshops, the students create rooms full of drawings and models to envision how design can heal communities. Each studio compiles a visioning report to leave with the community and carry forward into their professional lives.

The Remaking Cities Institute would solidify the role of the Urban Lab and its integration in our region’s political, foundation and industrial leadership activities, towards the revitalization of the Pittsburgh Region. The Urban Lab studios have not yet been fully integrated with other neighborhood and regional initiatives, city and county government, or private foundations and industry. Moreover, the massive creative output in research, drawings, models, exhibits and reports has no permanent residence, which would provide an invaluable basis for subsequent efforts by communities.
The Remaking Cities Institute will create a visually and educationally rich “design commons” and participatory toolbox for visioning workshops, full of digital and physical archives drawn from the entire design community who have contributed to neighborhood visioning efforts. In addition to hands-on tools for collaborative visioning, Pittsburgh’s participatory toolbox would build on the ongoing contributions of students and faculty to the PPND sponsored on-line Community Information System for Pittsburgh, built neighborhood by neighborhood by the Center for Economic Development. The benefits of these efforts would extend far beyond Pittsburgh, since the challenges to urban revitalization in this region, the analysis and visioning tools, and the solution sets, have meaning for cities worldwide.

The Remaking Cities Institute will unite a set of existing resources to provide a continuum of assistance to communities. A community may enter the RCI at any point, but conceptually the activity begins with the Urban Lab, which provides the tools, resources and inspiration to initiate the community revitalization process. The interdisciplinary teams in the Urban Lab assist communities in stating goals, aspirations, and general visions for the future, in collecting site and historical data, as well as best practice examples from elsewhere, towards the development of drawings, models, and prototypes that illustrate potential futures. Yet these studies and participatory visioning efforts are only the first step in the process of redeveloping communities. This early visioning effort is only the first step in the process of redeveloping communities, enabling the community to begin their collaboration with municipal, county and regional agencies as well as private developers.

Beyond the early visioning phase, the RCI will make available a broader range of resources for communities, such as market feasibility studies by student teams in the Heinz and Tepper schools. As the planning process moves closer to realization, the RCI can provide professional assistance from the staff at the Center for Economic Development. This assistance may include discrete technical assistance or analytical support to answer questions about the market conditions in the community or provide specifics on issues like neighborhood level migration or business dynamics.

At this point, a community is ready for the next level of support and can engage with the RCI affiliates, such as the Community Design Center of Pittsburgh (CDCP). The CDCP will facilitate the process of identifying neighborhoods for study, community communications and workshops, and linking community leaders with local design professionals to advance ideas generated and vetted through RCI services. This affiliation would institutionalize earlier collaborations such as the Find the Rivers Kirkpatrick Greenway Project. The CDCP will provide funding and technical assistance for additional planning via the Design Fund program. Through the Design Fund, the CDCP offers grants and technical assistance to help organizations purchase and effectively use professional architecture and planning services. The RCI and CDCP efforts will engage local partners such as the Pittsburgh Department of City Planning, URA, Allegheny Department of Economic Development, Pittsburgh Partnership for Neighborhood Development, and LISC to increase the likelihood of support for additional planning and implementation.

Structuring partnerships with leading regional organizations, such as the CDCP; the City Planning Department, the URA, AIA Pittsburgh and others, is a strategic goal for the Remaking Cities Institute, helping to ensure the revitalization of our neighborhoods and a sustainable region.
Lab Collaborations

Allegheny County Dept. of Economic Development
Boroughs of Arnold, Edgewood, New Kensington, Neville Island, Monessen & Swissvale
City of Duquesne
Citizens for Pennsylvania's Future
Community Design Center of Pittsburgh
Neighbors in the Strip
Friendship Development Associates
Garfield Jubilee
Hill House Association
Lawrenceville Corporation
Lawrenceville Stakeholders
Mon Valley Initiative
New Kensington Weed & Seed Program
Oakland Planning & Development Corporation
Pittsburgh Department of City Planning
Pittsburgh Parking Authority
Pittsburgh Parks & Recreation
Port Authority of Allegheny County
RiverLife Task Force
Sports & Exhibition Authority
Sustainable Pittsburgh
Urban Redevelopment Authority of Pittsburgh
US Army Corps of Engineers

The Remaking Cities Institute will build upon and strengthen the network of regional organizations working towards a sustainable future for South Western PA.
The Urban Lab - Pittsburgh’s “Early Visioning Team”

The Urban Laboratory at Carnegie Mellon University has been an interdisciplinary educational and outreach program since 1990. Every year, teams of students and faculty from the School of Architecture and the Heinz School of Public Policy and Management work with Mayors and elected officials, public agencies, private investors, and citizens of communities to collectively “vision” physical enrichments to their neighborhoods and communities.

As an outreach program of the University, the Urban Laboratory leverages the facilities and strengths of the University into partnerships with the urban neighborhoods and agencies of the metro region, in an on-going effort to explore new futures for communities. The student and faculty teams in the Urban Lab are drawn from several disciplines in the University. Most typically they are drawn from the School of Architecture and the Heinz School of Management and Public Policy, although several studios have involved students from the Tepper School of Business, Civil Engineering/ EPP, and the School of Humanities and Social Sciences.

The most distinctive characteristic of the Urban Lab is the realization that urbanist visioning must be interdisciplinary and hands-on. Elected officials, agencies, the private sector, interdisciplinary specialists, the citizens, are all in it together. In the last 25 years of practice in the US, the critical need for public participation has emerged as a key factor in urban design. 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 longer-term 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. One way of describing the Urban Lab process is democracy in action. For all concerned, the Urban Lab is learning by doing.

Since 1990, the Urban Lab faculty and students have worked with over 20 neighborhoods in mapping, analysis, and visioning efforts. From this ongoing list of partnerships, five recent Urban Labs will be discussed and illustrated: Hazelwood, the Hill District, New Kensington/Arnold, MONSEN and Lawrenceville.
Urban Laboratory Studios across the Region

Since 1990 the Urban Laboratory has generated community design visions for neighborhoods and towns across the region. The Remaking Cities Institute will build upon this legacy to catalyze a sustainable future for the region.
Project Communities

Baum-Centre Corridor
East Liberty
Fifth/Forbes Avenues, Downtown
Garfield/Friendship
Hazelwood
The Hill District (6 Urban Lab's)
Homestead
Homewood
Lawrenceville
Liberty/Penn Avenues, Downtown
Monessen
Mount Lebanon
New Kensington & Arnold
Neville Island
Northside
Oakland
The Strip District
Wilkinsburg
Swissvale
Southside
Vandegrift

HAZELWOOD URBAN DESIGN PROJECT
CARMEN DE MELON UNIVERSITY 5TH YEAR URBAN LAB FALL 2001

Carnegie Mellon University School of Architecture
In cooperation with the H John Heinz School of Public Policy and Management

The 2001 Urban Lab studio in Hazelwood examined the impacts of the proposed Mon-Fayette Expressway on the neighborhood. Student proposals explored a variety of development options with and without the proposed highway.
Hazelwood

Hazelwood is an neighborhood in the City of Pittsburgh overlooking the Monongahela River. Built on a hillside that slopes down to an alluvial plain, its grid of streets is rich in mid- and late-nineteenth century and early twentieth century pattern book houses. Second Avenue is a traditional main street of small shops with several historic churches and schools. In the late nineteenth century, the 300 acres of riverfront were acquired by Jones & Laughlin and steel mills were constructed. In the latter decades of the twentieth century the mills were acquired by LTV. Choosing not to modernize, the mills were gradually shut down and demolished. With the closing of the mills, hundreds of jobs were lost, shops were boarded up, and real estate values in Hazelwood plummeted.

Two major issues for the community emerged in its engagement with the Urban Lab. The first was the re-use of the riverfront. The second was the proposal by the Turnpike Commission to construct a six-lane expressway through the middle of Hazelwood, thus cutting off the residential streets from the sites for redevelopment on the 300 acres of “brownfields” riverfront. In a succession of public meetings, the Urban Lab worked with citizens, elected officials, and representatives of public agencies including the Turnpike Commission, to arrive at a series of recommendations that were based on what the community identified as its most important assets. A final public presentation was made at a large public meeting with the Mayor of Pittsburgh, the City Council President, and the media in attendance.

Monessen

In 2002, the Mayor of Monessen, John DeLuca, requested an Urban Lab studio to vision a future for the small depressed steel town in the Mid-Mon Valley. Since the demise of steel, the only large industry is the Koppers Plant on the riverfront. Once a huge employer, the plant is down to 75 employees, of whom only 15 live in Monessen. The town’s once bustling main street is lined with boarded up buildings.

The students of the Urban Lab made large-scale proposals, including housing, historic commercial restoration, and two linear parks to be built around the original hillside streams. Now hidden in culverts, these stream beds would incorporate plants capable of cleansing the polluted runoff, and the abandoned rivers edge would gain a fresh water aquarium to support research facilities for Western Pennsylvania Fish and Boat Commission in conjunction with California University of Pennsylvania.

This Urban Lab brought visions to Monessen, and inspired a number of neighboring Monongahela riverfront towns, including Donora, California, Brownsville, New Eagle, and Connellsville, to form a Mid-Mon Valley Council of Governments to promote sustainability, ecological conservation, and comprehensive economic growth.

The 2002 Urban Lab studio in Monessen explored visions for a revitalized community and redeveloped riverfront including new public open space, and new commercial and civic uses. Numerous urban lab studios have explored options for revitalizing the region’s numerous neighborhood main streets.
New Kensington/Arnold

In March 2003, the committee of Weed’n Seed in New Kensington/Arnold asked for an Urban Laboratory to help revitalize the historic commercial Main Street. At our first exploratory meeting we discovered that the Port Authority of Allegheny County was considering a rapid transit service from downtown Pittsburgh to a terminus in New Kensington/Arnold, with interim stops at the Strip, Lawrenceville, Verona, Oakmont, and Tarentum. We also discovered that New Kensington and Arnold were two side-by-side jurisdictions that grew together as a result of the world’s first plant to produce aluminum products for the marketplace. Together, they reinstated a sustainable town, with ten minute walking-time from edge to edge.

The Urban Lab, led by Ken Doyno and Dan Rothschild, focused the Lab on setting out the revitalizing impacts of transit on New Kensington/Arnold, with an emphasis on downtown renewal. Graduate students from the Heinz School worked in teams with architectural students from CFA. Economic and demographic studies and projections were completed in parallel to urban design and architectural proposals for a transit station linked to downtown and riverfront renewal. As a result, New Kensington and Arnold have formed a joint Commission to advise their Councils on comprehensive programs for restoration, growth and change, strongly based on the proposals of the Urban Lab.

The Hill District

The Hill District is an inner city neighborhood geographically adjacent to Pittsburgh’s downtown. It is substantially African American and poor, and is cut off from the downtown by an interstate expressway and also by the Civic Arena surrounded by parking lots. The expressway and the Civic Arena were built on land cleared in the immediate post-WWII years by urban renewal. Before urban renewal, the Lower Hill, as this area was called, was alive with shops, jazz clubs, townhouses and apartments before it was declared blighted. Presumably “blight” referred only to the physical condition of structures and not to culture. Much of the now-vanished Lower Hill is memorialized in the photographs of Teenie Harris and the plays of August Wilson, to say nothing of such jazz greats as Earl Fatha Hines, Charlie Parker, Dizzy Gillespie, Duke Ellington, Thelonius Monk, and dozens more.

Residents and civic organizations in the Hill invited the Urban Lab to assist with efforts to renew the neighborhood on a number of previous occasions. Since 1990-91, the year of the first Urban Lab in the Hill, there have been eight Urban Labs here. Proposals have covered historic conservation, arts facilities, pattern book housing, the revitalization of the Centre Avenue commercial corridor, and reuses for the Civic Arena site. Two of the most recent Urban Laboratories have been a collaboration with Dennis Candy and the River Life Task Force in the ‘Find the Rivers’ program. The 2004/5 interdisciplinary Urban Lab proposal by the School of Architecture, the Heinz School, the Tepper School, and the Hill House, won the J.P. Morgan/Chase first prize for a cooperative food store for Centre Avenue, to be developed by the Hill House Association. The $25,000 award went entirely to the not-for-profit partner of the project, the Hill House Association, to support the early stages of the implementation process.
Over six years students from the urban lab have worked to develop ideas for the Hill District, one of Pittsburgh's most severely distressed communities. Proposals have focused on ideas for revitalizing the historic fabric of the neighborhood and reconnecting the Hill to Downtown, Oakland, The Strip District and the rivers. Urban Lab studios in Lawrenceville have focused on capitalizing on the neighborhood's historic fabric and proximity to the Allegheny River.

Lawrenceville

Lawrenceville is a city neighborhood bordering the Allegheny River. A neighborhood of mixed land-use, shifting demographics and scattered reinvestment, Lawrenceville has been experiencing the beginnings of an urban renaissance in the last ten years. The neighborhood is also home to the longest disconnected and under-utilized stretch of riverfront of any neighborhood. Many new residents and businesses have moved to Lawrenceville in the last decade creating changes and spurring new development. Although the community is well organized with a variety of community groups, as of 2002 the neighborhood lacked a plan or cohesive community vision.

In 2002 Jonathan Kline led an Urban Lab studio in Lawrenceville around the theme of reconnecting the neighborhood to its riverfront. Over the course of the semester students worked with members of the Lawrenceville Stakeholders, the Lawrenceville Corporation and Lawrenceville United. Student visions focused on large-scale proposals to redevelop riverfront properties with new public space connections, new housing and new mixed-use commercial and light industrial uses. The studio also explored the possibility of transforming the Allegheny Valley Railroad line running through the neighborhood into a new commuter line serving Lawrenceville and the Allegheny Valley.

The Lawrenceville Urban Lab helped set the stage for a community based professional planning process which finally occurred in 2005. Student work in the community helped residents understand the planning process and see the enormous potential latent in their neighborhood. Ideas generated by the Urban Lab were incorporated into the official planning process led by Pfaffmann & Associates.
Act Local, Think Global:

Pittsburgh Neighborhoods – A Perfect Laboratory for Education and Positive Change

Most of the urban issues we encounter in the Pittsburgh region, and the urban design processes we advocate, have corollaries in cities nationally and internationally. Almost without exception, vibrant cities world-wide have been built up from pedestrian neighborhoods. The Pittsburgh metropolitan region is an important prototype in numerous ways.

Like many large cities, Pittsburgh’s physical history is one of small town development. The Pittsburgh metropolitan region is an accretion of urban communities and small towns. It is no wonder that the Pittsburgh metropolitan region has over a hundred separate jurisdictions. For precisely this reason, and the resulting complexity, case studies of Pittsburgh’s communities, and their interrelationship in the region as a whole, offer invaluable prototypes to other cities nationally and internationally.

Most of the towns in the Pittsburgh region grew around industries. To begin with, the industries were small – iron foundries, glass making, saw mills – located along the rivers. Because Pittsburgh’s terrain is one of hills and valleys, most of these settlements were separated from one another by open countryside. From the middle of the nineteenth century until WWI, industrial growth accelerated - especially steel, glass and aluminum. Immigrants from European countries and from the Deep South poured into these towns to work in the mills, factories and workshops. The towns grew rapidly. In almost every case, the industries occupied riverfront sites. Railway lines were built along the rivers to service them. And the towns grew up the hills away from the riverbanks.

Street upon street of “pattern book” houses were built on parallel terraces up the hillsides. Below the streets, water lines and sewers were laid. In the middle of each ‘town’ was a “main street” of shops, bars, and banks. On dispersed sites in each town, churches, schools, a library and a park were built. Along every street, trees were planted. And each town had its own government and public services. Built before the automobile, each town was typically no larger than 10 minutes walking time from edge to work, and from one side of the town to the other. In today’s planning terms, these are inherently “sustainable” towns. Typically, the towns have every aspect of urban living within a 10 minute diameter.

Today, the historic “main streets” in most of these towns are run down due to the impacts of suburban growth and malls, but they are still intact. Their tree-shaded streets of pattern book houses, and their churches, libraries, schools and other amenities are still intact as well, though suffering from sprawl and population loss, similar to neighborhoods around the world. Yet, few studies exist on the features and urban themes that these communities have in common, nor their value to a sustainable metropolitan area. Few studies have captured how these individual towns and neighborhoods relate to each other physically, economically, socially and politically, and their relationship to an efficient and on-going metropolitan region.

The days have gone when two or three major industries could hold the region together economically, as steel, aluminum, and glass once did. The economic future of the region must rest on realizing and exploiting the assets of these small, “sustainable” urban communities. Here, every aspect of quality and sustainable urban life can be found within an easy pedestrian compass. Pittsburgh’s neighborhoods, and their relationship to a metropolitan region, are both a history lesson and a roadmap for a sustainable future.
Connectivity and Sustainability: Pittsburgh Challenges have Global Relevance

The evolution of these neighborhoods into metropolitan areas have created two modern challenges for the Remaking Cities Institute - "sustainability" and "connectivity" - that are critical themes for education, research, and design visioning.

"Connectivity" is a broad and important theme that applies not only to Pittsburgh, but to large metropolitan areas in the US and in many parts of the world. Some have described the US as in a state of "transportation poverty", reducing our mobility choices to one form of transportation - the automobile. Even the provision of sidewalks, much less pedestrian friendly facades at the street level, are disappearing in the face of car-based planning. In 2002/03, a volunteer group of planners, architects, economists and transportation engineers including Urban Lab faculty, put together a Citizens' Plan for enhancing transportation in the Mon Valley through Penn Future. The purpose of the Citizens' Plan was to demonstrate how an efficient network of boulevards and public transit could connect the towns and urban communities of our region using existing road and rails, without the construction of another freeway or turnpike. Connectivity is central to the health of regions, and must be defined with more than highways, to include sidewalks, rail and transit, rivers and parks. "Connectivity" must be defined as more than physical connections, to reflect how communities interrelate with each other economically, socially, politically, and culturally. The dynamics of these interrelationships are the basis of sound metropolitan policy and strategy.

"Sustainability" is a second broad and important theme, and speaks to the state of our region's resources - land, air, water, infrastructures, and our built environment. Further discussed in the RCI Research Chapter, sustainable communities and regions not only ensure mobility for all generations, they ensure a shared quality of life that is built on access to clean air, clean water, food, shelter, utilities. The ability to capture and evaluate the condition of neighborhoods and regions, and their ability to deliver these basic tenets of a shared quality of life, and to envision futures that "regenerate" neighborhoods and regions, is a primary goal of the Remaking Cities Institute.

The Remaking Cities Institute, with the incremental contributions of Urban Lab projects, will support the development of a comprehensive database that can quantify the strength of our connectivity and the sustainability of our region, towards visioning a future that can be a prototype for cities worldwide.
Steps Towards Regional Impact

The products of visioning are forecasts of what the future of a city, or a community, might look like if alternative recommendations are carried out. As a result, urban design is sometimes described as the physical or three-dimensional representation of public policy. The challenge is to ensure that these 2-D, 3-D and even 4-D representations (with an overlay of time) are collaborative, iterative, cumulative, and accessible. To achieve this, the Remaking Cities Institute is proposing a physical place, a participatory toolbox, a growing regional map of layered information, and an interface for local and international community information systems that can access project research results and the international data bank.

The Urban Lab – a Physical Place

First, the Remaking Cities Institute would create a visually and educationally rich "design commons" and 'participatory toolbox' for visioning workshops, full of digital and physical archives drawn from the entire design community who have contributed to neighborhood visioning efforts. This Urban Lab would be a destination for communities, architects, and civic leaders to view their neighborhood in a regional context inclusive of the range of civic design goals, to rediscover the visioning results of innumerable past visioning efforts, and to vision with the power of models, drawings, and computer tools – possible directions for their neighborhood revitalization. The Urban Lab place would need space to support models, drawings, and computer data bases for our neighborhoods and region, and space to support the collaborative processes and tools for visioning, from debating, writing, and physical modeling to drawing and computational visioning.

The 'Participatory Toolbox'

Visioning must be inclusionary, enfranchising communities in the urban design process and enfranchising the critical range of disciplines and of stakeholders. The tools needed for this inclusionary process are many and diverse, and many of them are central to the Urban Lab studios.

Community Visioning might begin with the kinds of graphic and verbal doodling out of which ideas begin to flow and inspiration begins to take shape. Or it can begin with words, lists of issues or aspects of agendas yet to be addressed. At the same time, visioning requires substantial field work in the neighborhoods themselves. As demonstrated by the Urban Lab studio projects, graphic analysis and presentations, particularly drawings and models, have an immediate and lasting impact on citizens and policy makers. In 2005, the School of Architecture launched a new course to explore additional graphic tools for urban visioning, beyond the exercises now in use in the Urban Lab studios. Led by the new Caste Chair holder, Kelly Hutzell, this emerging contribution to the "participatory toolbox" is exploring urban case studies from around the world.
Professor Kelly Hutzel's new Mapping Urbanism course explores the theory and design of representation of urban form. Using computational tools, students map physical, social, economic and historical processes and the relationships between them.

As the vision begins to take shape and becomes more sophisticated - particularly in those complex terms of its relation to community contexts, its sensitivity to agendas, and its meanings in terms of implementation and cost - it requires the hands of interdisciplinary, professional urbanists. Each of these disciplines brings their own tools to the analysis and visioning process. It is the intention of the Remaking Cities Institute to collect, test, enhance and create a rich "participatory toolbox" for community visioning both locally and in communities world-wide.

The ultimate test will be the depth of analysis and the breadth of issues resolved in the visioning product. All participants and local residents will be encouraged to use the computerized data base, to study and understand precedents from other cities, and to participate in the computer modeling of recommendations. Perhaps the most important outcome of our initiatives for regional impact are educated citizens. The process is not successful unless all of those involved emerge with an understanding of the issues and choices, and an ability to talk with one another in an informed and structured dialogue, towards creating shared visions of sustainable communities.

Building on Pittsburgh's Community Information System

In addition to hands-on tools for collaborative visioning, Pittsburgh's participatory 'toolbox' will build on the ongoing contributions of students and faculty to an on-line repository of neighborhood conditions and analyses, building on the 'Community Information System' that has been developed by the Pittsburgh Partnership for Neighborhood Development with Carnegie Mellon's Center for Economic Development, the University of Pittsburgh Social and Urban Research and 10,000 Friends (http://www.ppnd.org/CIS.asp).

First, this enriched on-line data base and tool will incorporate the layered, three dimensional map of the physical and ecological conditions of neighborhoods, their interrelationships, and their regional implications. With ongoing contributions from students, these maps will incorporate changes of time in addition to present conditions related to natural features such as rivers, topography, climate, soils, water management and flood zones, overlaid with settlement patterns, land uses, demographics and density, transportation networks and volumes, utilities, parks and recreation and more. These physical layers of natural and man-made conditions would then be enhanced with economic, socio-cultural, health and quality of life conditions for the neighborhoods of our region.

The Pittsburgh metropolitan region is an interplay of economic investments and valuation data that can be captured in relation to settlement patterns and connectivity decisions. On-going programs, budgets, and sources of funding for public and non-profit agencies, alongside their mandates in the region, would provide a clear picture of who does what and how they overlap. Categories of information such as demographic information, investment patterns, and jurisdictional divisions, can then be added, as well as the relation of these to ecological data, utilities, waste disposal and power. At the same time, the Pittsburgh metropolitan region is a region governed by
Professor Douglas Cooper's Carnegie Mellon University Center Mural captures the sweeping vistas and perspectives of the city of Pittsburgh. The east wall shows Oakland and the Jones and Laughlin Steel Mill in the Monongahela River valley below.

fragmented laws and procedures, such as zoning, tax legislation, historic and conservation districts, that can be mapped and compared with evolution in land use patterns.

At the same time, it is critical to capture the social and cultural assets that the citizens of Pittsburgh's many communities and neighborhoods most cherish. These may be individual buildings such as churches, libraries or town halls; public places such as squares; sequences of historic commercial buildings that form main street; or industrial complexes that may be obsolete but signify important aspects of the community's past. Other assets may be less tangible, such as vistas, accessible places on riverfronts for recreation, or fishing holes, trails, revered woodlands and streams, and so forth. It is one thing to have specialists identify and map these, but quite another to have the citizens themselves create the networks of the parts of their community that they regard as pivotal.

Every community has its own history, actual or perceived, and its own local cultures, on which the future has also to be based. In many cases, today's citizens are members of families that go back several generations, and are intermarried or otherwise interwoven with other families. Helping citizens to construct maps of memories, and of other interrelationships, and creating oral histories, are activities that encourage the enfranchisement of people, particularly the elderly and the handicapped, who might not otherwise step forward. This interrelation between the assets of a community and its perceived future, which we refer to as its evolving local "tradition," is an important part of the program for community visioning. The art of faculty colleague, Doug Cooper, may best illustrate this richness and the shifts in perspectives that can only be seen through the eyes of citizens.

It is critical to provide communities with both resources and expertise to manage issues of growth and decline. A participatory design process must include tools to assist communities to understand how the community functions internally as well as how it functions in the regional context.

The direction of public and private sector investments in land use, connectivity, and building solutions make it eminently clear that:

• Communities must operate efficiently in a climate of limited resources.
• Organizations need to evaluate the impact of actions and investments.
• Early intervention and targeting of investments are crucial in reducing blight.
• Organizations should make more complex analyses of community issues.
• Community knowledge needs data and statistics, in addition to anecdotes and perception.

As a result, the Remaking Cities Institute is dedicated to advancing Community Information Systems to integrate data from multiple sources into easy-to-use spatial analysis tools. These information systems would help community planners and developers to: research community trends; target and prioritize interventions; act quickly in response to the first signs of blight or opportunity; and evaluate the impact of investments.

The enrichment of Pittsburgh's Community Information System will bring research and analysis data to decisions that transform our economic, physical, social, and cultural future. The benefits of these efforts would extend far beyond Pittsburgh, since the challenges to urban revitalization in this region, the analysis and visioning tools, and the solution sets, have meaning for cities worldwide.
Physical models are an essential tool in the community visioning process. For the 2005 Central Northside Urban Lab a detailed "1 = 100" model was constructed by students and used as a tool in community workshops.

**Major Collaborations for Regional Impact**

Clearly, the success of neighborhood and regional revitalization efforts in the Pittsburgh region are critically dependent on the collaborative power of a team of activists and visionaries well beyond the RCI. It is our intention that the Remaking Cities Institute would be a critical partner to the leadership through its dedicated students and faculty, its physical place—the Urban Lab, its emerging Participatory Toolbox, and its Community Information System. Indeed, we intend to be a ‘visioning and research’ resource for the breadth of leaders in this region, with our strongest existing alliances described on the next few pages.

**Pittsburgh Civic Design Coalition**

The Heinz Endowments launched the Pittsburgh Civic Design Coalition (PCDC) in 2004, to bring together the leading organizations for urban revitalization in the Pittsburgh Region, with representation from the Riverlife Task Force, Sustainable Pittsburgh, AIA Pittsburgh, Carnegie Mellon’s Urban Lab, the Green Building Alliance, Pittsburgh City Planning, and the Heinz Endowments. The significance of this coalition rivals that assembled for Pittsburgh’s earlier Renaissance efforts. Promoting the importance of quality design in all land use and building decisions, the PCDC is forging definitions of critical design goals and processes needed to ensure them.

The Remaking Cities Institute at Carnegie Mellon will be a pivotal arm of this coalition, through its faculty and student visioning efforts in the Urban Lab studios, its iterative development of layered maps of neighborhoods and the region, and its development of an international data bank that will feed a powerful Community Information System.

The Remaking Cities Institute will work toward realizing the emerging Pittsburgh Civic Design Goals. The RCI Community Information System will create measurable indices of urban performance related directly to the PCDC goals:

**Pittsburgh Civic Design Goals & Measurable Indices of Performance**

1. Celebrate and Enhance the cultural richness, diverse heritage and legacy of Pittsburgh.
   - Diversity of population, cultural, ethnic, racial, socio-economic
   - Attraction to young professionals, young families, retirees
   - Attraction to small and large business
   - Health of children, teens, professionals and retirees

2. Celebrate and enhance Pittsburgh’s natural topography, waterways and cityscape as unique elements of the city’s heritage.
   - Quality of water/ national rank of water quality industries/research
   - Quality of air/ national rank of air quality industries/research
   - Percent of greenspace per resident/ quality of greenspace
   - Number of storm crises
   - Quantity of waste, recycling/ national rank of environmental waste management industries/research

3. Restore and link Pittsburgh’s green spaces and landscaped arteries, the regions “green lung” for environmental quality.
   - Continuity of greenspace/ biodiversity
   - Viability of nature-based recreation activity/industry
   - Carbon sequestration, heat island reduction, pollution scrubbing – cool communities
   - Hillside protection, greenspace protection, development standards
   - Landscape innovations, living machines, rain gardens, brownfield gardens/industry
   - Brownfield vs. Greenfield developments
4. Design for continuous improvements in mobility for all generations.
   - Multi-modal accessibility to major sites
   - Percent of homes served by light rail/bus
   - Bikeways for mobility and recreation
   - Number of pedestrian live-work-walk settings
   - National rank of transportation industries/research
   - Low congestion, energy waste and pollution in transportation

5. Revitalize and integrate mixed-use neighborhoods of character with the downtown area.
   - Percent of new land used in development/indices of sprawl
   - Percent of buildings abandoned/underutilized
   - Number of pedestrian live-work-walk settings
   - Variety and density of urban housing
   - Social-economic and cultural diversity in neighborhood residents and buildings.

6. Promote creative and strategic investment in existing buildings of quality.
   - Occupancy rates
   - Intensity of historic or high architectural quality fabric
   - Level of maintenance, adaptive reuse intensity

7. Design/engineer buildings and communities for outdoor and indoor environmental quality.
   - Number/sq.ft of green LEED buildings/of green building industries and professionals
   - Environmental quality of building enclosures, HVAC, lighting (> Class A ratings)
   - Worker attraction-retention rates, absenteeism, health
   - Percent of daylit, naturally ventilated work/study places

8. Promote creative and strategic investment in our infrastructures to enhance the quality of the processions of residents and visitors.
   - Loading, Renewal rate and quality of power, gas, water, sewage, phone/cable infrastructures
   - Loading, Renewal rate and quality of transportation infrastructures
   - Renewed water infrastructures as public amenities (eg. Open waterways)
   - Renewed storm infrastructures as public amenities (eg. greenspace stormwater management)
   - Renewed sewage infrastructures as public amenities (eg. living machines)
   - Grid reliability, power generation capacity and efficiencies (with cascades)

Walkable mixed-use environments are an essential component of the sustainable city of the 21st century. Image copyright, Pittsburgh Regional Alliance, 2003.
Partnerships between the Urban Lab and professional organizations connect students and practitioners to work on visions for the region.

Community Design Center of Pittsburgh (CDCP)

As is further described in the RCI Structure Chapter, collaboration with the Community Design Center of Pittsburgh will be a strategic move for ensuring follow-through for the early design visioning efforts of the Urban Lab. With dedicated funding for the Community Design Center of Pittsburgh proposed in the RCI endowment, CDCP could help to facilitate the process of identifying neighborhoods for study; community communications and workshops; and linking community leaders with local design professionals to advance ideas generated by Urban Lab proposals.

A key component to successful planning and implementation is community capacity. There must be leadership and expertise, as well as funding, within the community to both meaningfully engage the community in the planning process and to carry a resulting project idea forward. This could be addressed by creating a competitive application/RFP process for communities interested in participating in the Urban Lab that addresses capacity and commitment to participate in the planning process, in addition to need. The application/RFP process would also take into consideration emerging efforts among public and private planning and funding entities in Pittsburgh to coordinate and focus community development resources in targeted areas.

With the support of the CDCP, the RCI's Urban Lab would more effectively engage local partners such as the Pittsburgh Department of City Planning, URA, Allegheny Department of Economic Development, Pittsburgh Partnership for Neighborhood Development, LISC, AIA Pittsburgh and more. This, in turn, would help to increase the likelihood of support for the next stages of planning and implementation, and would help to ensure that the numerous organizations in our region create shared visions of a strategic and sustainable future for Pittsburgh.

City Planning, Urban Redevelopment Authority, Allegheny Department of Economic Development, Port Authority of Allegheny County & PennDOT

While the Urban Lab has always focused its effort on neighborhoods, engaging the region's political leaders whenever possible, the Remaking Cities Institute would take a more pro-active role to be a strategic partner of the city and county planning agencies. City Planning and the URA as well as the Allegheny Department of Economic Development play a major role in land use and building investments in this region, while PAT Transit and PennDOT determine improvements in the transportation infrastructure. Equally critical to remaking the region are organizations such as the Pittsburgh Water and Sewer Authority.

AIA Pittsburgh, The Green Building Alliance, The Riverlife Task Force, Sustainable Pittsburgh

This region is energized by a number of visionary organizations dedicated to the revitalization of the Pittsburgh region including AIA Pittsburgh, Sustainable Pittsburgh, the Riverlife Task Force, and the Green Building Alliance. The Remaking Cities Institute would pursue strategic partnerships with these leaders, recently brought together in the Pittsburgh Civic Design Coalition under the leadership of the Heinz Endowments. Since land use, infrastructures, neighborhoods and individual building design decision making is integral to our quality of life, the breadth of these organizations, their goals and expertise, is critical to the educational, research and regional impact goals of the RCI. In return, the Remaking
Cities Institute would bring student energy and faculty expertise to advance the goals of these organizations, towards creating a unified voice that will ensure this region’s next renaissance.

University of Pittsburgh UCSUR

Although not design focused, the Urban and Regional Analysis program in the University Center for Social and Urban Research (UCSUR) at the University of Pittsburgh provides research and technical assistance services related to the proposed activities. UCSUR’s capabilities include topics related to changes in urban economic and social structure, regional economic development and competitiveness, population dynamics, income distribution, occupational structure, and industrial mix.

UCSUR also operates a Community Outreach Partnership Center (COPC) program that provides technical assistance to community organizations and community development corporations in Oakland and Hazelwood. The Remaking Cities Institute would provide complementary and accelerated efforts related to the physical improvements and design quality of Pittsburgh’s communities, central to our economic strength.

UPMC, Children’s Hospital, Highmark & Regional Health Agencies

There is growing evidence that the built environment is linked to health. Input and research by interdisciplinary teams of health care researchers, architects, social scientists, economists, community leaders, and others may be essential for successful community health outcomes.

Health and the built environment are strong teaching and research interests of Carnegie Mellon University and the Remaking Cities Institute. CMU has active partnerships with the Allegheny County Health Department (lead, housing, and food studies), Allegheny County Medical Society (obesity interventions), Children’s Hospital of Pittsburgh (pedestrian injury research), Environmental Justice Institute (social, income, and health factors), University of Pittsburgh Graduate School of Public Health (obesity and cardiovascular research), Highmark and City of Pittsburgh City Planning Department (obesity interventions), UPMC Medical School (obesity research and interventions), and UPMC’s Collaborative on Health and the Environment (environmental health and oncology mapping).

These projects reveal the substantial impact that the physical attributes of communities have on the health of citizens in the Pittsburgh region. Ongoing research at the Remaking Cities Institute in collaboration with these leaders in health services will have a strong impact on the physical health of communities in the Pittsburgh region and will serve as national models for excellence in health related studies in the built environment.
Visionary projects of the urban lab focus on strengthening existing neighborhoods and building new connections between communities. A vision for re-connecting East Allegheny, Spring Garden & Troy Hill back to the Allegheny River and the Strip District along Chestnut and 16th Streets. Work by Jeremy Forsythe, Jesse Gidley, Seth Hunter & Deniz Seclimis developed with Northside residents in 2005.

The Remaking Cities Institute – A Leader in Community Visioning for the ongoing Revitalization of the Pittsburgh region.

Conclusion

An endowed Remaking Cities Institute is central to: continuing the participatory outreach efforts of CMU students and faculty; to offering early visioning support in alliance with public and private leadership; to supporting their productions and publications; and to building the urban lab ‘storefront’ and ‘participatory toolbox’ for community visioning. Most critically, an endowed Remaking Cities Institute will support the development of three building blocks for successful revitalization in our region: the ‘Participatory Toolbox’; the layered, three dimensional map of the physical and ecological conditions of neighborhoods, their interrelationships, and their regional implications; and the Community Information Systems that bring research and analysis data to decisions that transform our economic, physical, social, and cultural future.
A student project exploring the Baum-Centre Corridor in Pittsburgh's East End. The work of Josh Aisenberg, Michael Baker & Brian McCarthy studied the possibility of using the busway corridor as a spine for higher density development and new multi-modal trail systems. Central to the project was a study of high-performance mixed-use typologies.
The Remaking Cities Institute will be a world-class developer of community visioning and revitalization tools, as well as economic, health and quality of life proof sets defining livable communities.

Built on Carnegie Mellon University strengths, three areas of strategic research could transform education, policy and practice in remaking cities. First, the RCI would lead the development of computational and participatory visioning tools tied to an international data bank of case studies to enable professionals and students to visualize, benchmark, analyze, and vision robust neighborhoods, downtowns and regions. Second, the RCI would accelerate the quantification of the impacts of community fabric on the economic, social, health and other performance indices of the long term vibrancy of our region. Third, Carnegie Mellon University’s architects, engineers and public policy leaders would lead in design and engineering innovation, including systems integration that crosses disciplinary boundaries, towards strategic improvements in regional infrastructures that ensure a sustained quality of life.
Eliel Saarinen’s plans for Helsinki are representative of early twentieth-century visions of urban growth, integrating a variety of uses, parks, streets and public transportation.

Remaking Cities International Data Bank & Participatory Visioning Tools

Urbanism is the art of building great cities and beautiful urban spaces that are both an expression of the culture and life of communities and the environment that sustains them.

Although experienced as a whole, the spaces and parts of our cities are created by many separate agencies, entities and disciplines. Each discipline strives to optimize its own criteria - often at the expense of others. In a democracy, urbanism is an integral part of a dynamic, often chaotic political and public process. Successful urbanism must provide vision and leadership for the political process and engage all disciplines in order to achieve a balance among these diverse interests towards building sustainable, vibrant environments.

There seems to be a huge deficit in capturing “best practices” in the evolution of cities around the world. We seem to be unable to quantify and qualify the positive and negative impacts of land use patterns or concerted interventions in revitalizing neighborhoods and cities. As a result, the creation of multidisciplinary case studies with cohesive documentation about successful policy and physical planning interventions for revitalizing neighborhoods and cities is sure to transform urban design and planning. Harvard Business School case studies have certainly transformed business education by bringing successful and failed managerial interventions. Urban design, urban policy, urban geography, architecture and civil engineering fields critically need best practice case studies if revitalization and growth are to have the quantitative and qualitative grounding needed for informed decision-making.

The information needed to support such efforts is extensive and must reflect the significant advances in the range of disciplines that determine the strength of cities and their regions. The RCI team proposes to develop an international data bank of best practices, incorporating the quantitative and qualitative conditions that led to and continue to define successful neighborhoods, cities and regions. These best practice case study tools could be used to mobilize students around the world into creating an “self-generating” library of case studies with the potential of comparative analyses and recommendations that incorporate the breadth of factors influencing the strength of cities. In the following sections, ten major factors that are central to effective case study development are introduced. Given the breadth and depth of these factors, they would be developed over the long term, with priorities set as the Remaking Cities Institute leadership is in place:

1. The Lessons of History: Most disciplines rely on precedents to provide an understanding what works and what does not. There are several streams of inquiry:

   A. Documentation of Physical Form: Plans, photographs, sections, elevations, and context analyses of successful urban spaces, town designs, city plans, and regional plans and configurations should be compiled and catalogued with comparable scales and techniques. Around the world, many individuals, professional organizations, institutes, public agencies, and academic institutions are documenting successful places. The role of the RCI would be to compile that information and organize a data bank.

   B. The social, political, and economic environment which produced these towns, cities, and public places can often provide guidance for the techniques. Resources include the Princes Foundation, various universities, and individuals such as Alick MacLean (Medieval democratic processes), Nicholas Adams and Charles Mack (Renaissance).
2. Public Process and Urbanism: In a democracy, the public realm is the best determined by a process of public engagement. There has been much progress in developing techniques for engaging citizens in the design process. Most of these are organized around specific initiatives and are effective for the duration of the planning process. There has been less progress in instituting longer term mechanisms that enable citizens to continue to have discretion in the implementation of such programs. Mechanisms such as community boards for various services including schools, community based development corporations, and local governance mechanisms are being tested in various cities.

In the last 25 years public participation in the design process has emerged as a key factor in urban design. Most public participation processes engage citizens for the duration of the planning process expanding the range of concerns addressed, towards improving the quality of design. There has been less progress in instituting longer-term 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. Case studies will examine public engagement processes and longer term empowerment strategies exploring organizational roles, engagement techniques, and process methodologies.

Resources include: Charrette Institute, Portland, Oregon; Nicole Swerun, Toronto, Ontario, Canada, Urban Strategies, the Jonathan Rose Company, as well as UDA and CMU; Henry Sanoff (North Carolina State University), Association for Community Design, Hamer for Community Design (Pennsylvania State University)

3. Social Consequences of Urbanism: The debate continues as to the role of the physical environment in the social structure and health of a community, especially centered around the creation of social capital.

The structuring of the built environment, and the processes and systems that regulate it, has an enormous effect on inter-human relations. Debate continues on the role of the physical environment in the social structure and health of a community, especially centered on the creation of social capital. The goal of creating and sustaining mixed income, diverse urban places, requires a clear understanding of the way community identity and image can provide a framework for people to relate to their community and to interact with each other.

Designers play a significant role in the creation of systems affecting social interaction, community building and political life. The process of design itself can also be used as a tool for social engagement and empowerment. Case studies will explore the affect of the built environment and the process of urban change on the development of social capital, community building and citizen empowerment.

Resources include Robert Putnam (MIT), Emily Talen (University of Illinois, Champagne Urbana, Philip Bess (Andrews University), David Brain, New College of Florida, Barbara Brown University of Utah, Brookings Institution, Rockefeller Foundation (Darren Walker), SURDNA Foundation, PENNCURE Program, University of Pennsylvania; Philip Bess is at University of Noltre Dame, Richard Sennett (London School of Economics and NYU) and Saskia Sassen (London School of Economics and University of Chicago)
4. Economic Role of Urbanism: Throughout history, there has been a direct connection between major advances in Urbanism and periods of economic development. The 19th Century redevelopment of Paris was an economic development strategy to establish the city as an international center of business and trade. We are now in the midst of a revival of urban areas as a key factor in the economic development of regions.

Case studies from around the world will explore the changing role of the city in a shifting global economic system with an emphasis on examples of urban revitalization that harness global economic systems for local benefit.

Resources include: John Norquist (The Wealth of Cities), Richard Florida (The Creative Class), Chris Leinberger (Brookings), Saskia Sassen (London School of Economics and University of Chicago) and Jane Jacobs.

5. Sustainable Urbanism: The concept of sustainability has been much discussed in terms of creating “Green Buildings.” Less has been done on sustainable urbanism. This is beginning to be studied at several scales:

A. Regional development patterns that create mixed use, walkable settlements connected by transit to reduce dependence on vehicles.
B. Mechanisms for managing regional growth to support these goals, eg: the Transect.
C. Sustainable Agricultural programs that reconnect the production of food to the region in which it is produced as a means of preserving the balance between rural and urban development.
D. Technologies for waste management, energy production, etc. that can have a positive impact on urban form.
E. Natural Conservation programs to preserve fragile natural features and habitats.

A critical component of sustainability is the importance of understanding the city as an integral part of the landscape and its ecology. Case studies must also focus on interventions to restore ecological systems and redefine urban systems around landscape ecology principals.

Resources include the CNU (Doug Farr and Harriet Tregoning), SAGE (Sybella Krauss); The Green Building Council, The Soils Association (Britain), as well as CNU; Ian McHarg, James Corner (University of Pennsylvania) Pennsylvania State University Landscape Architecture, Chatham’s Program, The STUDIO for Creative Inquiry.

6. Urbanism and Transportation: The long monopoly that highway departments have held over the design of streets and roads seems to be coming to an end. A much more balanced approach is emerging at the national policy level and in some local jurisdictions. These new techniques, methods and understandings must now be made available throughout the nation at the local level to be able to institute real reform. In spite of the continuing dominance of highways in Federal and State budgets, there have been a surprising number of transit initiatives around the country, particularly in the rapidly developing parts of the Southwest.

Resources include: Reconnecting America (Shelly Poticha), Gladding Jackson, Railvolution, ITE, and the ULI.
7. **Representation and Communication in Urbanism**: In order to communicate the central values of urbanism among the many individuals involved in the planning and design process, it is essential to develop techniques that enable all participants to visualize the impact of decisions. New Urbanism’s success in changing policies has been due in large part to the images its members have used. Major developments in the use of digital media to simulate three dimensional urban environments have assisted this process, as well as the revival of traditional techniques such as watercolor and oil paintings.

*Resources include UDA, CMU, Ex Tempore of the Seaside Institute, ICA, Notre Dame, University of Miami.*

8. **Theories of Urbanism**: Over the course of 2,000 years, the practice of urbanism has been guided and in some cases, misguided, by a series of seminal works of urban theory. A compilation of key theories with an evaluation of their impact and success would be helpful in the process of generating new theories of urbanism that respond to the changing world in which we work.

*Resources include historians and analysts as well as current theorists: Robert Fishman, Joseph Rykwert, Witold Rybczinski, Leon Krier, Andres Duany, Peter Calthorpe, Allen Elliot, Rem Koolhaas, Jane Jacobs, Douglas Kelbaugh, Michael Sorkin, N. J. Habraken, Anne Vernez-Moudon, John Friedmann, William McDonough, Collin Rowe, Kevin Lynch, Christopher Alexander.*

9. **Implementation of Urbanism**: Tools for implementing urbanism generally fall into three categories:

A. **Legislation**: which includes codes, public policy governing growth, land use planning, and regulatory plans. This area is in crisis at the moment because the majority of such mechanisms are not based on physical considerations, but abstract formulas. They tend to be anti-urban and defeat the objectives of urbanism. Current efforts include form based codes, new manuals for public works, and devices such as the transect. *Resources include: DPZ, CNU, Thomas Comita, Randall Arendt, CABE (Britain), The Princes Foundation, Dan Slone.*

B. **Instruments of Service**: to support the building and development process. These include techniques for planning, architectural services, Pattern Books, Plan Books, and designs for the production building industry including the manufacturing of building elements. *Resources include UDA, Princes Foundation, ICA.*

C. **Financial and Development Mechanisms**: Much of the poor quality development in the US is due to the way in which projects are funded, generally with short term financing, with restrictions that limit urbanism (eg: penalty for mixed use districts and buildings). New techniques are being developed and need to be tested and made available. *Resources include: ULI, Brookings Institution, Arcadia, PENNCURE, Wharton School.*

10. **Urbanism and the Fine Arts**: Throughout history, great moments in cities have been celebrated and informed by the work of great artists, eg: The Lorenzettis in Siena, Canaletto in Venice, the Impressionists in Paris. The postwar period of the Twentieth Century provided few examples of this. We are now seeing the beginnings of a revival. Carnegie Mellon is ideally suited to fostering such a movement.

*Resources include: Doug Cooper, Jonathan Kline, Ex Tempore, Princes Foundation, ICA, CMU School of Art, CMU School of Design and The STUDIO for Creative Inquiry.*
Computational tools and methods are transforming the possibilities for the participatory community design process. By developing participatory visioning toolkits the Remaking Cities Institute will be a research leader in this emergent area.

**Participatory Visioning Toolkits**

A parallel effort to establishing an international data bank is to collect and develop computational, methodological and physical tools for participatory and multidisciplinary visioning processes. Carnegie Mellon’s RCI is strategically placed for this effort due to the international leadership of Urban Design Associates in hands-on participatory processes, the strength of the Urban Laboratory Studios and the computational leadership of CMU’s faculty. In addition to two and three dimensional toolkits for participatory visioning, our efforts will focus on the development of new methodological approaches to the practice of Urban Design by providing team members and other stakeholders with computational tools that will create awareness of precedents, and a layered analysis of the economic, environmental, physical and social implications identified in the RCI international data base. We expect that these tools will facilitate the alignment of divergent frames of reference, create common ground, and foster collaboration.

In an environment characterized by an abundance of viewpoints and knowledge bases, but a lack of a common vocabulary, a visioning toolkit for the assessment of community opportunities (VisTA) is essential to empowering communities and the multi-disciplinary design team. As advanced computational studies linking physical planning decisions to social, environmental and economic consequences emerge (see next research section), the visioning toolkit will provide access to both the international case study data bank and to emerging research results.

Both the hands-on and the computational “visioning toolkits” are critical for community members, students and even professionals to discover, quantify, and invent. These participatory hands-on and computational tools would support the ability to work at multiple scales from the block to the neighborhood to the city to the region, to visualize, benchmark, calculate, analyze, and explore both revitalization and invention.
Right: Physical models are a key tool for helping communities understand the impact of proposed changes. Models can also be used as a tool for community engagement as in the art & urban landscape research of Jonathan Kline & Christine Brill.

Below: Computational models are able to communicate ideas and concepts quickly as in this student model illustrating the possibility of using the East Busway as a trail connection.
High-Performance Communities and Cities

Explorations in the linkage of the physical design and condition of neighborhoods and cities to human health, environmental quality, economic growth, and other performance metrics is a second area of research uniquely suited to the skills of CMU and Pitt faculty working together. Ecology, health, and a shared quality of life are inextricably linked to the fabric of our communities and cities — relationships that still need to be described and proven.

The Remaking Cities Institute will further Carnegie Mellon’s leadership in the development of new tools for community design visioning; tools to reveal interdependencies, analyze and synthesize; tools to link case studies and environmental, census, and photographic data bases to early design and revitalization decisions; and tools to vision with linked analyses.

The power of computational tools is transforming practice, and RCI faculty are leaders in the use of Geographic Information System tools for urban analysis. The Geographic Information System (GIS) is a research tool for analyzing spatial relationships, such as geographic representation. It allows for combining of physical coordinates (locations) with empirical data. ArcView is a full-featured GIS software program for visualizing, managing, creating, and analyzing geographic data. This program is the most widely used desktop GIS software that permits building of new geographic datasets with relative ease, as well as importation and exportation of empirical data. With a host of regional partners, Jerry Paytas, at the Center for Economic Development in the Heinz School of Public Policy and Management, and Kristen Kurland, leading GIS/Arctview educator and author, would lead the expansion of RCI’s efforts to:

Develop information Resources for Decision-Makers and Citizens

Working with a number of partners, the Center for Economic Development has developed a Community Information System (CIS) for Pittsburgh that will ultimately be expanded throughout Southwestern Pennsylvania. Our partners include the Pittsburgh Partnership for Neighborhood Development, 10,000 Friends of Pennsylvania, Three Rivers Connect, the Community Technical Assistance Center, the Pittsburgh Community Reinvestment Group, the University Center for Social and Urban Research at the University of Pittsburgh, and MAYA Design. The Center identified and developed data that made the CIS operational. The Center is also working on specific applications of the CIS, such as intervening early in the cycle of vacant property to reduce foreclosures and property abandonment. The CIS is also being used to examine how the city can make better use of public facilities to serve its communities. The school district has begun to close facilities in response to declining enrollment system-wide. The CIS gives citizens and public officials a tool to adjust community services more broadly to serve the people and needs of today.

Understand Local-Regional Tradeoffs

The CED has developed an approach to apply the concepts of regional industry cluster analysis to communities within a region. This approach will unite a variety of stakeholders in the development of a strategy to identify the critical assets. The CED and Washington County were recently funded to implement this methodology for the county’s growth and development. This methodology leverages local and regional assets to promote industry clusters in the project area. By enhancing the relationships among area firms, institutions, community leaders, and workers, Washington County will attract business investment, diversify the county’s economic base, improve competitiveness, strengthen local communities, and improve opportunities for area residents.

Advance the State of Knowledge Regarding the Development of Cities Over Time

Using new longitudinal databases of employment dynamics, researchers can analyze and map the real dynamics of job creation and destruction. A better understanding of how these dynamics impact places will enhance development efforts.
Physical Attributes

<table>
<thead>
<tr>
<th>Economic / Quality of Life Proof Sets</th>
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</thead>
<tbody>
<tr>
<td>architecture, land use &amp; quality of life</td>
</tr>
<tr>
<td>sprawl</td>
</tr>
<tr>
<td>mixed-use vs. single-use zoning</td>
</tr>
<tr>
<td>road design &amp; sidewalks</td>
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<tr>
<td>transportation alternatives</td>
</tr>
<tr>
<td>adjacency to green space &amp; accessibility</td>
</tr>
<tr>
<td>(roads, topography, sidewalks, availability, safety)</td>
</tr>
<tr>
<td>age &amp; condition of buildings</td>
</tr>
<tr>
<td>(lead &amp; radon, cockroach)</td>
</tr>
<tr>
<td>brownfields</td>
</tr>
<tr>
<td>power source and adjacency</td>
</tr>
<tr>
<td>daylight &amp; natural ventilation/passive conditioning</td>
</tr>
<tr>
<td>building 'obesity' - megaplexes</td>
</tr>
<tr>
<td>regional responsiveness, eg mold</td>
</tr>
<tr>
<td>amenities (including diverse disciplines &amp; populations hangouts)</td>
</tr>
<tr>
<td>health, obesity</td>
</tr>
<tr>
<td>health, cancer</td>
</tr>
<tr>
<td>health, asthma</td>
</tr>
<tr>
<td>health, blood poisoning, neurological damage, slowness</td>
</tr>
<tr>
<td>health, injuries, accidents</td>
</tr>
<tr>
<td>economics, jobs</td>
</tr>
<tr>
<td>economics, property values / vitality</td>
</tr>
<tr>
<td>economics, waste</td>
</tr>
<tr>
<td>economics, commute time / congestion</td>
</tr>
<tr>
<td>economics, infrastructure costs, maintenance</td>
</tr>
<tr>
<td>economics, reduced abandonment</td>
</tr>
<tr>
<td>economics, workforce / investment attraction</td>
</tr>
<tr>
<td>justice, access to amenities</td>
</tr>
<tr>
<td>crime rates</td>
</tr>
<tr>
<td>environment, pollution</td>
</tr>
</tbody>
</table>

Establish Early Warning indicators for Communities

The CED has established a protocol to identify and track on the order of 40,000 migrants entering, moving within, and leaving the Pittsburgh region each year. The data can be updated as frequently as monthly. This resource can be used to identify develop profiles of migrants to support marketing campaigns targeted at former residents and potential new residents. This database provides a tremendous asset for profiling the various categories of migrants and identifying the most critical subpopulations. The CED can then develop targeted surveys of individuals moving to and from the region in order to determine the critical push/pull factors impacting migration decisions, such as employment, family, education, and quality of life.

Establish the intersection of the Urban Fabric / Physical Space & Economic, Social, Environmental & Health Conditions

Most critically, the RCI intends to expand efforts to develop interdisciplinary, economic modeling linking physical planning to economic vibrancy and equity, environmental quality, health, safety and overall quality of life. A number of studies have been initiated by Carnegie Mellon faculty in partnership with a host of regional leaders, towards addressing the linkages of a range of physical attributes in communities to critical economic and quality of life issues. Providing the critical relationships of the physical attributes that define our cities with the economic and quality of life consequences is a critical focus for the emerging Remaking Cities Institute.
Research at the Center for Economic Development has focused on mapping connections between industry clusters across regions to understand the opportunities and challenges facing the Pittsburgh Region.

Where are the firms and where do they sell goods & services?

**Geography of Employment**

Given present economic and policy drivers, development is taking place in outlying suburban areas rather than in the historical urban and business centers, often far from people most in need of employment. Challenges for workers trying to gain access to new employment centers in the suburbs are borne out in public transportation patterns, housing costs near new development sites, and the enlarged geographic separation between unemployed workers and new commercial development sites.

**Land Use and Health**

Growing interest in the impact of community design on health, has led to a number of joint studies between Carnegie Mellon, UPMC, the University of Pittsburgh, with numerous of local partners. Through an ongoing partnership with the University of Pittsburgh School of Public Health, RCI faculty are working directly with the community, in particular low income areas, to design, develop, and pilot-test interventions designed to modify the built and environment and reduce the burden of obesity and associated cardiovascular disease complications. Obesity is the most prevalent, fatal, and chronic disease of the 21st century increasing at a rate seen before only with infectious diseases.

The investigative approach has three principal features: (i) synergistic use of an extensive array of anthropometric and biological data being collected in two ongoing longitudinal studies being carried out by our group in Western Pennsylvania - the Heart Strategies Concentrating on Risk Evaluation (HEART Score) study in adults, and its companion study among entire families (Family Score); (ii) assessment of the impact of the built environment in minority and predominantly lower socioeconomic (SES) communities; and (iii) evaluation of physical activity and nutritional practices as mediating variables between the built environment and obesity and obesity-related comorbidities.

Specific Aims are to: assess the influence of the built environment on frequency, intensity, and type of physical activity performed; assess the influence of the built environment on dietary practice; assess the influence of the built environment on obesity and obesity-related cardiovascular disease risk factors, including the mediating effects of physical activity and dietary practice; and to design, translate, prioritize, and evaluate the feasibility of conducting community-based interventions that aim to modify adverse characteristics of the built environment in predominantly lower SES communities in western Pennsylvania.

The opportunity to link the physical design and condition of neighborhoods and cities to human health, environmental quality, economic growth, and other performance metrics is critical area of research for the future. The unique skills of the faculty and students at Carnegie Mellon (see attachment C) working with the University of Pittsburgh and UPMC will ensure that the Re-making Cities Institute is both vital to this region and to community and land use design worldwide.
The work of researcher Kristen Kurland uses GIS analysis to correlate geography and statistical health databases. Recent studies have looked for patterns of childhood obesity and elevated lead levels in the built environment.

Childhood Obesity
- Collaboration with Highmark, Allegheny County Medical Society, City Planning, Children's Hospital of Pgh, Pittsburgh Public Schools
- Analyze neighborhood walkability and amenities
- Identify and encourage physical activities near schools

Green Spaces Near Schools
Polygon buffer created 1/2 and 3/4 mile around schools

Fast Food Near Schools

Children with Elevated Blood Levels

Allegheny County Housing Data

Note: Cases aggregated to Census Tracts
Data obtained from U.S. Census and Allegheny County Health Dept.

Childhood Lead Study
- Collaboration with Allegheny County Health Department Lead and Housing Managers
- Mapped cases of children with elevated blood levels
- Aggregated data to census tracts and neighborhoods
- Mapped housing built before 1970
- Mapped income levels
- Mapped educational attainment

Population 19 years and over by gender
- Male
- Female
- Not sure

Distance Near School
- Not a concern
- More than 2/3 mile
- More than 1/2 mile
- More than 1/4 mile
- Less than 1/4 mile

Fast Food Restaurants
- Elementary
- Middle school
- High school
- Commercialized

No. Elevated Blood Cases By Tract
0 - 10
11 - 20
21 - 40
41 - 80
81 - 150
Innovative Design and Urban System Integration for Quality of Life

The third critical focus for research in the Remaking Cities Institute, after discovery and quantification, is invention. The challenges of communities and cities exceed disciplinary expertise and are most critically affected by the visionary resolution of fabric and connectivity for the holistic quality of life of all citizens. Given the dynamics of technology, economic activity, social and cultural richness that define our cities, this fabric and connectivity must be flexible, high performance, and environmentally sustainable.

Carnegie Mellon’s Center for Building Performance faced exactly these questions when they developed the Intelligent Workplace with its flexible infrastructures to support organizational and technological dynamics, human health and productivity, and environmental sustainability. It is now time for the development of the Intelligent City, with flexible infrastructures to the regions economic and technological dynamics, human health and productivity and environmental sustainability.

Historically, infrastructures have enriched the visual and physical environments in which they are built. Worldwide, infrastructures for water and land management as well as transportation create breathtaking views and details. Even in the U.S. the elegance of historic cobblestone and brick streets, rod iron fences, steel and cable bridges spanning rivers, crafted stone bridges and retaining walls, reservoirs and historic structures for utilities continue to grace our cities. Unfortunately, the investments in infrastructures as architectural amenities (so prevalent in the WPA period in the US) are no longer considered in the design or engineering of most infrastructure projects.

Indeed, the layers of civil infrastructures in American neighborhoods are typically designed for minimum first cost, and constructed and maintained at least cost, with little regard for the negative impact on other layers of service. The infrastructures are assumed to be fixed, long-term requirements, embedded in concrete, with little or no access or flexibility to upgrade or change service. Moreover, there appear to be very few coordinated efforts between the industries that provide water, storm, sewage, power, voice, data, and transportation. The results are roadways torn up for water service one month, marginally patched, resurfaced on an independent schedule, and then torn up for sewage or cabling the next month. The lack of coordinated investment in quality and flexibility is becoming more urgent as the layers of service options increase in neighborhoods and as the service loading changes in relation to today’s more dynamic neighborhoods. The urgency for multi-disciplinary, applied research and educational initiatives to generate, integrated and flexible infrastructure alternatives is driven by at least five pervasive conditions:
The Mandate for Flexible Innovations to Regional Service Infrastructures

A. The linear, redundant, destructive management of existing infrastructures/services.
B. The decay/obsolescence of many infrastructures/services in older neighborhoods (the billion dollar deferred maintenance nightmare).
C. The growing number of new service requirements in US neighborhoods.
D. The growing dynamics in service loading as neighborhood densities and functional mix become dynamic.
E. The forgotten opportunity to use service infrastructures as neighborhood and regional amenities.

The opportunities are significant, and the Pittsburgh region is an excellent proving ground. The explosive costs of overloaded storm/sewage infrastructures, the ongoing failures and costs of above ground power and data/voice cabling, and the pent-up need for more sustainable forms of transportation and landscaping, offer major opportunities for a multi-disciplinary applied research team to develop innovative alternatives for new or renovated service infrastructures.

Service Distribution

Infrastructures with Fragmented Investments to be Integrated for Sustainability:

Transportation:
- roads
- bridges
- rail
- light-rail
- bikeways
- sidewalks/ ADA curbing
- mixed-use live-work-walk communities
- alternative transportation
- inter-modal transport
- parking
- traffic calming
- traffic lights and signage
- multi-disciplinary sustainable metrics

’Piped’ Utility:
- potable water
- water conservation, zero water communities
- water quality, maximum loading
- open waterway amenities
- storm, on-site management
- sewage, on-site management
- grey water, black water use
- landscaping, zeroscaping
- multi-disciplinary sustainable metrics

’Wired’ Utility:
- power
- distributed generation, energy cascades
- gas
- energy conservation, zero energy communities
- data/voice/entertainment
- neighborhood amenities
- sub-surface utility coordination, integrity, flexibility, reliability
- Multi-disciplinary Sustainable Metrics

’Land’ and ’Air’ Utility:
- land quality, highest and best use
- urban growth boundaries
- infrastructure loading & maintainability
- air quality, maximum loading
- regional material LCA
The market for downtown housing seems to be booming, but where are these new residents coming from? The Center for Economic Development prepared an overview of the Downtown and the North Shore. This information provides insight into the market for downtown residential living and contributes to city and regional efforts to revitalize the city's Central Business District.

A 2005 Center for Economic Development study on migration asked what communities have attracted the most and the least foreign immigrants. Comparing and contrasting these two communities can identify the drivers for attracting more new residents to the city and the region.

Moreover, there are a few engineers, architects, or managers who have collaboratively taken leadership in the creation of infrastructures as environmental amenities—anywhere in the world. In the U.S., Richard Dattner in New York has led design teams in creating a series of public utility plants that serve as neighborhood and regional recreation areas. In Austria, Hundertwasser has transformed power plants into urban art. A few design teams have begun to transform gray water and sewage treatment facilities into flower and food gardens of amazing beauty. These designers are not only transforming NIMBY fights into neighborhood amenities, they are transforming the economic arguments for investing in quality infrastructures. To ensure sustainability, every road, sidewalk, bridge, parking area, water supply and runoff, waste processing, telecommunications network, and utility project should be seen as a dynamic, yet timeless, aesthetic opportunity.

Given the strength of the architecture and engineering faculty at Carnegie Mellon and the University of Pittsburgh, as well as the ongoing MS and PhD programs dedicated to exploring design/engineering invention for improved quality of life, the RCI can be a regional and international leader in design/engineering invention for remaking cities.
The Remaking Cities Institute – A Center for Research and Invention

Conclusion

The Remaking Cities Institute will be a world-class developer of community visioning and revitalization tools, as well as economic, health and quality of life proof sets defining livable communities, and design/engineering invention to ensure their realization. All of the regional investments in pursuing health, crime, environment, economic development need to have the physical planning component fully represented by experts in architecture and land-use to ensure that investments yield lasting improvements to the region.

The Remaking Cities Institute should be a partner in each of these pursuits – linking community, land use and infrastructure to quality of life, health, safety, economic development and environmental sustainability. To do this, the RCI at CMU is seeking a timeless endowment to support faculty and graduate students as well as seed funding for cross-disciplinary pursuits. The contributions of the Urban Lab over the past 15 years, and those of the faculty in applied research, as well as a growing base of regional partners, attest to the expertise in this region, and the accomplishments possible with sustained commitment from institutions in the Pittsburgh region. Permanently endowing RCI is critical to ensuring that regional research accomplishments will positively improve the Pittsburgh region itself. Permanently endowing RCI is also critical to ensuring the contribution of cutting edge research, education and innovative practice to the physical planning futures of struggling cities around the world.
Recent student work in the Northside by Geoffrey Di Beneditt, Stephen Mrljenovich, Rebecca Rahmiow, Samantha J. Triola, Dianne Chia, Jonathan A. Scolitz & Kevin C. Wei. Manchester, West Allegheny and the Mexican War Streets are re-connected with new open spaces and revitalized street corridors. The project also proposes a node of transit oriented development along the route of a future LRT connection to the airport.
The Remaking Cities Institute will be a world-class developer of community visioning and revitalization tools, as well as economic, health and quality of life proof sets defining livable communities.

The Remaking Cities Institute will be a strategic collaboration of educational, research and regional leaders, with physical places, data bases and archives to support regional visioning and global research, and will ensure the long term focus of students and faculty on the revitalization of community for long term economic, social and environmental sustainability.

The structure of the Remaking Cities Institute builds on a number of existing assets at Carnegie Mellon, including the Urban Laboratory and the Center for Economic Development, while providing a unifying structure that can provide a foundation for collaboration and success that is institutionalized and sustainable.
The Remaking Cities Institute: People

The RCI leadership would be provided by a Board of Advisors, a Director and two Chaired faculty leaders, tenure track and research faculty, as well as two boards and ongoing visiting experts. The Director of the Remaking Cities Institute would provide the leadership for all three RCI goals – with a commitment to ensuring the translation of expertise into sustained improvements in our region.

The Remaking Cities Institute will be the premier resource for educating and empowering professionals to catalyze quality community design and revitalization.

The Remaking Cities Institute will be a world-class developer of community visioning and revitalization tools, as well as economic, health and quality of life proof sets defining livable communities.

The Remaking Cities Institute will be a leader in community visioning for revitalization in the Pittsburgh region, collaborating to ensure the tipping point for reversing sprawl and rediscovering community.

The RCI leadership endowment would also sustain two boards and the ongoing involvement of visiting experts and lecturers. The RCI planning committee has debated long and hard the importance of both an international board to address research and educational innovation for remaking cities, and a regional board to address research, education and participatory processes critical to regional impact. The following tables of board members who have committed to serve, and their biographies at the end of this chapter, will help reinforce the significance of the Remaking Cities Institute and the international standing of the initiators of this proposal. The strength of the RCI team and the two advisory boards will help to ensure that both the international and regional goals are achieved with support from visiting experts as well as an ongoing lecture series and master classes.

The second focus of an RCI endowment is on two senior Chaired Professorships, one in Architecture, and the second between Architecture and the Heinz School of Public Policy, to ensure the highest caliber of scholars focused on ‘remaking cities’ education and research at an international level. We envision a David Lewis Chair for Architecture to solidify over 15 years of Urban Lab accomplishments with a faculty member of the stature of David Lewis, such as UDA founder Ray Gindroz. We envision a Heinz Chair in Urban Sustainability for a joint Heinz/Architecture senior faculty position to solidify the contributions of Jerry Paytas, and the CED in this region. These two senior chairs would lead RCI research and scholarship activities central to education, regional impact, and international consequence.

The RCI would also build on the Lucian and Rita Caste Chair by proposing a second junior faculty chair to strengthen educational offerings for the B.Arch, MUD, MS and the long term PhD program. Seed funding for faculty will advance multi-disciplinary curriculum development that is critically needed to address the revitalization of cities, and to develop research proposals for emerging national funding sources. These collaborative, multi-disciplinary proposals would address all three areas outlined in the research directions of the RCI: Developing the International Data Bank and Participatory Visioning Tools; Quantifying High Performance Communities and Cities; and Designing Innovative Systems Integration for Quality of Life. At the same time, the research will use the Pittsburgh region as “test-case” in order to contribute to its redevelopment efforts.

Investing predominantly in people – the key to community revitalization - an endowed Remaking Cities Institute will support a two million scholarship fund. These scholarships would compete
To attract our biggest asset - the best students in the country and around the world.

Support for Graduate and Undergraduate Faculty with Urban focus:

- **Urban Design Chair**
  - Chair: John B. McVey
  - Visiting Experts Program

Program support and Staff

Scholarships:

- **Public Policy Chair**
  - Chair: John B. McVey
  - Invited and accepted:
    - Leon Krier, Architect/Planner/Teacher
    - Henrik Dittmar, Director of the Prince's Foundation for the Built Environment (UK)
    - Gordon Clark, Head of the School of Geography, Oxford University (UK)
    - Luis Caranza, Vice-president for Information Technology, Monterrey Tech (Mexico)
    - Laurie Volk, Housing Market Analyst
    - Bill Gilchrist, Director of Planning, Birmingham, AL
    - AIA RUDP Chair
    - Bill Hudnut, Former Mayor of Indianapolis
  
  - Local Board - Discussed but not contacted yet:
    - Lisa Schrader, Executive Director, Riverlife Taskforce
    - Paul O’Neill, Former Chairman ALCOA, Former Treasury Secretary
    - Anne-Marie Lubenau, Executive Director, Community Design Center of Pittsburgh
    - Damian Soffer, President and CEO, The Soffer Organization
    - Dorothy Langley, Executive Director, Pittsburgh Partnership for Neighborhood Development
    - Deborah Lewis, Associate Professor, School of Nursing, University of Pittsburgh
    - Allen Kukovich, Former State Representative

  - Note: a few more distinguished experts in related fields have been contacted and the list will be updated as soon as we receive confirmations.

  - Bridge Grant

  - Local Neighborhood

  - The bridge grant provides a mechanism for follow up - it will provide funds to engage professionals in a process that should culminate in implementation. It will be administered jointly with the PCDC.

Other MUD and MS programs to bring the best graduate students to Pittsburgh - to focus their talents and energy on our region and strategies for revitalization. This 'brain trust' will not only be invaluable in participatory visioning and research focused on the region, these students will become invested in Pittsburgh to strengthen our region's revitalization team for the long term.

At the same time, Carnegie Mellon University would sustain its ongoing commitments to education focused on the design, engineering and policy innovations central to sustainable neighborhoods and cities. Four fifth year studios and a Heinz School project course will continue to be dedicated to the revitalization of the Pittsburgh region, the equivalent of one faculty line each. Over a dozen required and elective courses focused on Urban History, Urban Economics, Urban Design, and Urban Policy would be ongoing, the equivalent of a second faculty line each.

The Caste Chair would continue to bring young urban architecture professionals to lecture and teach studio with a focus on urban revitalization. Finally, CMU's world class development of GIS and other computational tools would continue to be advanced for urban-focused research as well as undergraduate and graduate courses, with special attention to the Pittsburgh Region. With an endowed RCI, the accomplishments of a number of Carnegie Mellon outreach programs, including Architecture for Kids, could be consolidated towards ensuring the focus of our outreach is the social, environmental and economic strength of our region.
The Remaking Cities Institute: Physical Places

The School of Architecture’s long term commitment to the Urban Lab is physically supported by four undergraduate studio spaces, a new graduate Urban studio, and three faculty spaces, while The Heinz School houses the Center for Economic Development with faculty and staff. An endowed Remaking Cities Institute would build on these physical resources, adding a new Urban Lab ‘design commons’ with archives and participatory tools, as well as offices for three newly endowed positions.

As described in the Regional Impact chapter, the Remaking Cities Institute would create a visually and educationally rich ‘design commons’ and participatory toolbox for visioning workshops, full of digital and physical archives drawn from the entire design community who have contributed to Pittsburgh neighborhood visioning efforts. This Urban Lab would be a destination for Pittsburgh communities, architects, and civic leaders: to view their neighborhood in a regional context, inclusive of the range of civic design goals; to rediscover the visioning results of innumerable past visioning efforts; and to vision with the power of models, drawings, and computer tools – possible directions for their neighborhood revitalization. The Urban Lab place would need space to support models, drawings, and computer data bases for our neighborhoods and region, and space to support the collaborative processes and tools for visioning, from debating, writing, and physical modeling to drawing and computational visioning.

Our proposal envisions that part of the philanthropic gift to support the creation of RCI will be dedicated to design, construction and maintenance of the ‘design commons’; to develop and maintain the participatory toolbox with 2-D, 3-D and electronic tools; to collect and digitize the archival material; and to initiate the international ‘data bank’ of urban and neighborhood design precedents.
The Remaking Cities Institute: Regional Partners

One of the most significant tasks for the Director of the Remaking Cities Institute and the chaired faculty, is to strengthen the relationship of RCI’s regional impact goals with those of critical neighborhood and regional organizations, including: City Planning, URA, Riverlife, CDCP, AIA Pittsburgh, Allegheny Department of Economic Development, Pittsburgh Partnership for Neighborhood Development, LISC, Sustainable Pittsburgh, PAT, PennDOT, and others.

The long term impact of both research and the educational program is critically intertwined with our collaboration with these partners, and must recognize our unique contributions within this collaborative process. For example, the Urban Lab is an ‘early visioning studio’ that depends on the involvement of civic leadership and professional design firms. A successful transition into the Remaking Cities Institute will be based on our ability to partner with key Pittsburgh leaders in leveraging the energy and creativity of 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.

To this end, the RCI team is proposing a partnership with the Community Design Center of Pittsburgh, with dedicated funding proposed for the CDCP in the RCI budget. Representing the broader constituency of organizations, the CDCP would bring expertise in identifying neighborhoods for study and facilitating community communications and workshops. A key component to successful planning and implementation is community capacity. There must be leadership and expertise within the community, as well as the potential of funding, to meaningfully engage the community in the planning process and to carry a resulting project idea forward. In collaboration with the CDCP, the RCI could initiate a competitive application/RFP process for communities interested in participating in the Urban Lab, addressing their need as well as their capacity and commitment to participate in the planning process.
Even more critical, the CDCP would help to ensure follow-through after the academic semester by linking community leaders with local design professionals to advance the ideas generated by Urban Lab proposals. We have a recent example of the potential success of this partnership in the Find the Rivers! Kirkpatrick Greenway Project in the Hill District. The work of undergraduate students in the Urban Lab was further refined by Master of Urban Design students, to the point where it served as the basis of professional work funded through the CDCP’s Design Fund program. This work led to an interdisciplinary neighborhood revitalization project involving the School of Architecture, the Heinz School and the Tepper School to introduce a cooperative grocery store in the Hill District. This project won the national JP Morgan Chase Community Development award in 2005, and is on the road to realization aided in part by the first place prize money of $25,000 awarded to the Hill House Association as result of the student’s work.

With endowed funding, a partnership between the Community Design Center of Pittsburgh and RCI’s Urban Lab’s will help to ensure effective coordination and focus community development resources in targeted areas. The CDCP may also be the most strategic partner to further engage other regional organizations key to the success of revitalization projects, including the Pittsburgh Department of City Planning, URA, Allegheny Department of Economic Development, Pittsburgh Partnership for Neighborhood Development, LISC, and a longer list that reveals the difficulty and importance of the partnerships for remaking this region.

The Remaking Cities Institute: International Partners

While the focus of the Remaking Cities Institute is on the Pittsburgh region, the impact of educational and research innovation will be international. Our academic partnerships with Oxford University in England and Monterrey University in Mexico provide outstanding opportunities for educational and research collaboration. Leaders at these institutions, Gordon Clark and Luis Caraza, have agreed to serve on the RCI International Board. Moreover, they are committed to a number of initiatives that are central to RCI, including the development of the international data bank in defining sustainable communities.

Equally significant are partnerships led by Ray Gindroz with the Princes Foundation for the Built Environment in London and the Seaside Institute in Florida. The Princes Foundation is forming collaborations with ten major institutions around the world to be able to exchange faculty and other resources as well as develop curricular materials and coordinate research efforts. The Foundation’s educational programs include courses for the general public, for the building industry, and for the design professions as well as the development of a degree program in urban design. Sustainable design is the focus of studies of traditional urbanism. The Seaside Institute conducts a series of training programs for professionals in various disciplines engaged in urbanism and high level symposia that explore themes of Town Building and Land Stewardship. Other relationships are being discussed with the Congress for the New Urbanism, University of Miami, Georgia Tech, Hampton University, Notre Dame University in both South Bend and Rome, among others.
Under the umbrella of the Remaking Cities Institute, the work of the Urban Lab will have greater impact in the region.
Conclusions

Why Endow a Remaking Cities Institute Now?

This is a strategic window of opportunity for ensuring that urban revitalization remains a core value for regional decision-makers, for ensuring that Pittsburgh’s universities maintain their lead in education and research on the revitalization of cities, and for ensuring strategic contributions to remaking the Pittsburgh region. The historic moment is framed by:

Individuals

- Since his leadership of the Remaking Cities Conference in 1988, David Lewis, FAIA has built the Urban Lab at Carnegie Mellon with over 15 generations of students supporting neighborhoods in visioning a future – an amazing legacy of urbanists.
- Two renowned partners in his firm Urban Design Associates, Ray Gindroz and Don Carter, are committed to ‘pick up the baton’ from David Lewis to provide leadership for the Remaking Cities Institute at Carnegie Mellon.
- The Lucian and Rita Caste Chair has been established in Architecture, dedicated to bringing a junior faculty member focused on architecture in the urban context, along with the annual Cornerstones Conference on Remaking the Region.
- Leading practitioners and regional leaders, from Anne Marie Lubenau, Ken Doyno, Dan Rothschild, Jonathan Kline, Casimir Kawecki to Rebecca Flora are committed to strengthening the educational and regional impact of Carnegie Mellon’s Remaking Cities Institute.
- Two stellar advisory boards, one international and one regional, have committed to steer the Remaking Cities Institute to catalyze sustainable urban futures and excellence in community design.
- The convergence of research agendas of seasoned and emerging researchers on urban issues: Luis Rico-Gutierrez’s research in “Visioning Toolkits” for urban and community development, Kristen Kurland’s expertise in geographic information systems, and the ongoing partnership with the Center for Building Performance and Diagnostics through Vivian Loftness, Volker Hartkopf and Steve Lee.

Allied Centers

- Under the leadership of Jerry Paytas and Robert Gradeck, the Center for Economic Development at the Heinz School has expanded its world-class computational research into linking regional design and policy to our regions economic vibrancy and human health.
- The Steinbrenner Institute, The Center for Building Performance, The Studio for Creative Inquiry, The Electricity Center, and the emerging Water Infrastructure Initiative provide the opportunity to explore innovation in the design of regional infrastructures to enhance quality of life.
- The University of Pittsburgh, in Engineering, Public Policy, Health Science and the Medical School, has a growing number of faculty and researchers committed to the issues of regional sustainability and health.

The Pittsburgh Region

- Pittsburgh is at a tipping point. The region’s future is being challenged by sprawl development just as other regions are rediscovering the ethnic, pedestrian, mixed-use neighborhoods that Pittsburgh is famous for. The temporary gains of beltways and expressways, waterfront malls and office parks, lead to abandonment and a loss of national and international allure. Yet the trade-offs have not been quantified or illustrated to engender a change in direction.
- Leadership is at a tipping point. After several successful Renaissance revolutions in Pittsburgh, led by political and corporate leaders, it may be time for university and foundations to take the lead. The leading organizations for regional revitalization – Riverlife, CDC, GBA, Sustainable Pittsburgh, City Planning, AIA Pittsburgh, and the Urban Lab – have begun to mobilize as a team under the leadership of the Heinz Foundation’s Civic Design Coalition.
The mission of the Remaking Cities Institute is to catalyze sustainable urban futures and excellence in community design.

An endowed Remaking Cities Institute at Carnegie Mellon University can have a pivotal role in consolidating the individual and organizational strengths in our region and accelerating the 'tipping point' towards revitalization. We are convinced that this commitment can be instrumental in reversing the "flight of the creative class" (Florida 2005). Given the talents of the faculty, professionals, and institutions that have helped to forge this proposal, the RCI has every potential to achieve its first five-year vision: to be recognized internationally as the key resource for rebuilding urban communities, demonstrated through the revitalization of communities in the Pittsburgh region.
Urban Lab & Remaking Cities Institute Historical Overview

The roots of the Urban Laboratory at the Carnegie Institute of Technology (now Carnegie-Mellon University) were planted in 1963 when the decision was made to inaugurate a graduate urban design program in the Department of Architecture, and to appoint David Lewis as the Andrew Mellon Professor of Architecture and Urban Design to lead it. At the time there were two graduate programs of urban design at other universities, the program in the Graduate School of Design at Harvard under Walter Gropius, modeled on the Bauhaus, and the program at the University of Pennsylvania under David Crane and Holmes Perkins.

The graduate urban design program at CIT, 1963-68, was different from these. David Lewis decided to take the Pittsburgh metropolitan region as its living “hands-on” studio. Students were urged to choose any urban design problem in the city or the region as their thesis, and the faculty, with the aid of consultant urban economists, sociologists, historians, public policy, and developers, would facilitate their work. It was thus an early – maybe the first – interdisciplinary “hands on” urban design program of its kind in the U.S.

Parallel with the founding of the CIT urban design program was the Civil Rights movement. It was clear that the U.S. had a long history of disconnection with a significant percentage of its population, resulting in segregation and disenfranchisement in urban neighborhoods as well as rural areas. David Lewis and his colleagues recognized that the way political and planning decisions were being made by power-brokers who were remote from the traditions and aspirations of the people in the communities whose lives they affected was no longer acceptable.

Instead they began to initiate procedures for the open enfranchisement of citizens in planning and urban design. Therefore parallel with setting up the graduate program in urban design at the Carnegie Institute of Technology, David Lewis and Raymond Gindroz founded Urban Design Associates in 1964, one of the earliest practices in the US devoted to urban design and to citizen enfranchisement, and David Lewis became involved in the R/UDAT program of the American Institute of Architects.
At first urban design procedures - both academically and professionally - were primitive and difficult. When the Urban Workshop was founded at Yale by David Lewis and Raymond Gindroz in 1970 the procedures became a bit more sophisticated. It is perhaps noteworthy that Andres Duany and Elizabeth Plater-Zyberk, founders of the Congress of New Urbanism, and several other leaders in urban design today, graduated from these studios at Yale. A decade of private practice in Urban Design Associates followed, parallel with the AIA's R/UDAT program, during which time David Lewis also chaired the national AIA's Urban Design Committee and became a founder of the national Institute of Urban Design.

The late seventies and early eighties saw the collapse of heavy industry in Europe and the United States. Cities in the industrial north of England, Scotland, Northern Ireland and Wales, and in the Ruhr Valley of Germany faced deep economic depression. Cities in the United States that were centers of heavy industry were hit hard, including Detroit, Pittsburgh, Cleveland, Birmingham, and others.

International initiatives were boosted by the concern and leadership of the Prince of Wales. In 1988 an international Remaking Cities Conference was held in Pittsburgh, with over 600 delegates drawn from several countries. The conference was organized jointly by the American Institute of Architects and the Royal Institute of British Architects. It was chaired by David Lewis. Prince Charles was the Honorary Chair and the keynote speaker. A case study of the plight of several mill towns in the Mon Valley was prepared beforehand by an international interdisciplinary team, and this became a focus of the Conference.

In the aftermath of the success of the Conference, a suggestion was made to set up a Remaking Cities Institute. At the core of the Institute would be a "Data Bank", dedicated to collating and disseminating the on-going efforts of heavy industrial cities internationally to reconstruct. The Institute would then become a U.S. "go to" center for everyone - professionals, politicians, planners, educators, urban economists, community activists - concerned with comparing and learning from the precedents of other cities moving forward with reconstruction, nationally and internationally. The Institute would run education programs, conferences and issue publications.

But in 1988 the idea of such an Institute seemed premature, since the reconstruction of cities, devastated by the sudden erosion of their economic and employment base, had hardly begun. It appeared to be more important that cities in the U.S. and Europe should have time to develop up their case studies, as each of them took their own steps to rebuild, prior to the founding of the Institute; and a decision was made to start in Pittsburgh.

In 1990, shortly after the Conference, Dr. Omer Akin, Head of the Department of Architecture at Carnegie-Mellon University, asked David Lewis to return to the University and recreate the Urban Laboratory after a gap of over twenty years. By this time virtually every aspect of the Pittsburgh metropolitan region was suffering from the effects of the closing of the mills and the demise of related industries. Encouraged by Dr. Akin's successor, John Eberhard, the decision was made to use the metropolitan region as the Urban Laboratory studio.

The fundamental theme of the Urban Laboratory was laid out in its first studios. The metropolitan region was viewed, not as a huge sprawling city with the Golden Triangle as its single core, but as a grouping of towns, neighborhoods and urban communities, each with its own history and its own identity.

In the physical forms of these towns and neighborhoods were shaped before the advent of the automobile. The genesis of town after town was a growing industry, often along a riverfront, and streets of pattern book houses, schools, a main commercial street, churches, library and park, within an urban form of ten minutes diameter in walking time. In each case the natural topography
of hills and valleys gave the town a unique form, with woodlands and agricultural land beyond its edge. And as each town grew it generated its own local government, school board, and other institutions, and became what today we refer to as basic case models of sustainability.

The first Urban Laboratories in 1990, Vandegrift and the Lower Hill, set the tone for the program. Vandegrift was a company town, laid out by Frederick Law Olmsted as a “working man’s paradise” for Apollo Steel. It was planned as a sustainable town, inspired in part perhaps by Ebenezer Howard and Jonas Salk, and also by Olmsted’s own Riverside, south of Chicago. Its central business district, historic theater, riverfront, and curvilinear streets of pattern book housing, suffered a steep economic decline with the demise of steel.

The program for the Lower Hill – for which the citizen chair was Dwayne Cooper – was the first to confront the socially destructive aftermaths of urban renewal, the scars of the 1967 riots following the assassination of Martin Luther King, by enfranchising the citizens in open meetings throughout the urban design process.

A parallel start was also made in Great Britain. Through the Royal Institute of British Architects, an interdisciplinary program of Community and Urban Action Teams (CUDAT) was established. One of the founders of this program, Alan Simpson, spent a year in the mid-90s in the Urban Laboratory at CMU as a Fitzgibbon Professor, and following this experience he set up Yorkshire Forward, an on-going and extraordinarily successful program for the revitalization of industrially distressed towns in the north of England.

One of the reasons why Yorkshire Forward progressed so quickly was that it drew support from Britain’s national government, particularly from John Prescott, Britain’s Deputy Prime Minister, and also that Alan Simpson had role models in the Urban Laboratory in Pittsburgh, and in Britain’s CUDAT program based on R/UDATs. These enabled him to see that – like the Pittsburgh metropolitan region — the heavy industrial belt of the North of England and Scotland was composed of individual towns, each with their own histories, local governments, and highly characterized assets. In the past ten years he has been extraordinarily successful in using international teams to enfranchise the elected officials and citizens of these towns to develop urban designs and create a region-wide interrelationship.

Since 1990 the Urban Laboratory at Carnegie Mellon University has responded to requests from leaders in the region’s towns and neighborhoods, calling for interdisciplinary teams of students and faculty to help resolve key issues and evolve towards futures that reflect their own goals. From an education point of view, students work directly with the people, the elected officials and the public agencies in these towns and communities.

From the community’s point of view, it is important that the voices and aspirations of local citizens are heard, and their issues seen in relation to the region as a whole, its road and rail transportation networks, its rivers, and its resources of nature and ecology. It is important too that the urbanists who graduate from the Urban Laboratory have a firm understanding of how to work in interdisciplinary teams, and that their products have to be comprehensive, interdisciplinary, and publicly accountable.

In almost every Urban Laboratory, the most pressing issues take center stage and dominate early discussions. Usually these are economic and social, demise of industry, the erosion of tax base, unemployment, crime, and the struggle of its institutions and public amenities to survive. But parallel with these discussions, the Urban Lab will make a study of the town’s physical and social “archaeology” – the history and implicit beauty of its urban form, its ethnic history, its brick streets laid out by immigrants, its pattern book houses, the architecture of its churches and other notable buildings — and it will set out its architectural and urban design languages, so that side by side with the issues there will also be an inventory of assets.
Inevitably the town will begin to see itself with new eyes. In every Urban Lab, tradition is of key importance – tradition being the bridge between a town's past and its future. Only by understanding where the town has been can we begin to see where it might be going. Only by matching issues with assets, and by setting out goals and priorities, can the tools for moving forward be determined. Every Urban Lab makes its projections on the basis of time frames – what can be achieved in five years, ten years, etc.; what the impacts are likely to be; and what the strategies are to achieve those projections. Only by opening up the process to everyone who wishes to participate can leadership be found in unexpected places. None of this is a new idea. Its worth reminding ourselves of the words of Thomas Jefferson:

*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.*

With the encouragement of Vivian Loftness, who succeeded John Eberhard as head of the School of Architecture, the Urban Laboratory has grown over the past decade into a mature interdisciplinary program led by a distinguished and experienced faculty. It has two levels, undergraduate and graduate. At the undergraduate level it is open to architecture students in their final year of studies. At the graduate level it is open to students who have professional experience in three-dimensional comprehensive design and/or specialist experience in related disciplines. At both levels the Urban Laboratory recognizes that every line in a graphic urban design document carries meanings in history and tradition, economics, engineering, public policy, and other disciplines, and that every line has to carry echoes of the public voice.

Today, with renewed encouragement by Laura Lee, who has succeeded Vivian Loftness, and coordinated by Luis Rico, the Urban Laboratory draws students from a number of schools in the University, including the School of Architecture, the Heinz School of Public Policy, Humanities and the Social Sciences, the Tepper School of Business, the Steinbrenner Institute, and the College of Fine Arts. We believe that only through gaining interdisciplinary experience in teams can students graduate as urbanists.

During the past fifteen years – from the Remaking Cities Conference, and the re-establishment of the Urban Laboratory at Carnegie Mellon – much has happened. New initiatives, such as the Congress for New Urbanism, have laid the basis for new approaches. Consequently cities in several countries are developing comprehensive processes of city-building.

In 2001 and 2002 David Lewis, Richard Florida from the Heinz School, and Don Carter from UDA, held continuing discussions about establishing a new institute at Carnegie Mellon that would combine the theories and techniques of urban design and aspects of the New Economy. Richard Florida was working at the time on his new book, *The Rise of the Creative Class*, and several of his ideas were incorporated in these discussions. Sponsored research folded into interdisciplinary coursework for undergraduate and graduate students, plus executive education for practicing professionals, were to be aspects of the new institute.

The time has now come for the Remaking Cities Institute to be established, to be the international “clearing house” that it was originally proposed to be. At its core would be a computerized data bank that will collate precedents and case studies from cities nationally and internationally. These will be set out in sub-sets of information, such as urban form, priority goals, public and private initiatives, political and legal strategies, economic and social benefits, measurable sustainability, and so forth, so that towns and cities can learn from the experiences of each other and we can learn from them.

The Urban Lab will be a component of the Remaking Cities Institute. The value of the Urban Laboratory lies in its “hands on” education and in its case studies. The Laboratory concentrates on
developing case studies based on urban communities in Western Pennsylvania. These communities are at once separate and sustainable, yet they are interconnected components within a large metropolitan region. Since it is the characteristic of most metropolitan regions to form neighborhoods, cities internationally can learn from these case studies.

A second arm of the Remaking Cities Institute is research, as described in a later section. Areas of focus include health and obesity, crime, economic development, water, air quality, real estate, transportation, and brownfields, and the impact of these areas of research on urban form. Research fellowships and doctoral programs will be offered. The Institute will organize conferences and issue publications.

Computer capabilities have developed exponentially in sophistication since the suggestion was made in 1988 to form the Institute — capability, not only in assembling the data bank but in computer modeling as well. Many of these advances have derived from researches done at Carnegie Mellon University. It is therefore appropriate that the Institute and its computerized data and modeling base should be housed at Carnegie Mellon University in Pittsburgh, where it can be accessed internationally by professional urbanists, citizens and students alike.

The recent involvement of Urban Design Associates in the graduate and undergraduate curricula of the Urban Lab, and in the formation of the Institute, has brought into our program two leaders in the urban design profession worldwide, Ray Gindroz and Don Carter, and the resources of a distinguished firm. It has also given the Institute an incomparable series of detailed precedents from UDA's practice and also from the Congress of New Urbanism.
**Why do we need an RCI?**

- A region and a state that is sprawling, among the worst nationwide as codified by the Brookings Institution study.
- A growing population of US design professionals (future architects and urban planners) who have never experienced a pedestrian lifestyle, and who take car dependency as a necessity.
- Growing health consequences of sprawl and car dependency.
- Growing pollution consequences of sprawl and car dependency.
- Growing energy consequences of sprawl and car dependency.
- Financial and political decisionmakers who need proof to shift from policies and subsidies that continue sprawl development.
- Growing disparity in quality of life, tax base, infrastructures, and services between older urbanized areas and newer suburban and rural development.
- Fragmented political decisionmaking and few resources to support collaborative visioning.
- No state or federal funding streams dedicated to enhancing education or research revitalization.

**Seen positively:**

- Opportunity to rediscover and revitalize vibrant main street, whole life communities that are unique to Pennsylvania and the Pittsburgh region.
- Opportunity to rediscover the richness of culturally and ethnically diverse communities as well as regional amenities that are easily accessible by all ages.
- Opportunity to strategically reduce obesity and other major health concerns linked to lack of exercise and fresh air, through the revitalization of whole life communities.
- Opportunity to strategically reduce dependence on imported energy and energy related pollution through building and community energy efficiency as well as reduced car dependency, while increasing Pennsylvania’s export economy based on a surplus of cleaner fuels.
- Opportunity to strategically address storm/sewer crises, redirecting major mandatory investments in green spaces, tree canopies, innovative water features and upgraded buildings.
- Opportunity to strategically address mobility through pedestrian communities, linked by light rail, and strengthen the region’s economy through high speed rail linking Pennsylvania’s major cities to the nations economic centers.

**Why Endow a Remaking Cities Institute at CMU?**

- A 15 year tradition in the Urban Lab linking the School of Architecture and the Heinz School of Public Policy with Pittsburgh neighborhoods.
- A strong array of courses on sustainability, urban design, urban policy, urban history, GIS, statistics and more (see list).
- A 10 year tradition of working with innercity youth in Architecture for Kids and SLAP programs on the importance of design in neighborhood revitalization.
- Leading faculty in Urban Design and Urban Policy with national and international reputations as educators, scholars, researchers and practitioners (see list).
- Alliance with international leaders and institutions dedicated to remaking cities, including a joint degree program with Oxford University and Monterrey.
- Alliance with the nation’s most established urban design firm UDA.
- Fully aligned with CMU’s Strategic Plan focus on community and environment.
- University situated in an ideal “living laboratory” of neighborhoods in every stage of discovery and revitalization.
- University structured to fully support innovative, multi-disciplinary and multi-campus research and education, including health, policy, and design/engineering research.
- A ongoing cadre of outstanding faculty and students, across a number of disciplines, committed to design for social and environmental responsibility.