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Pittsburgh Hillsides

AMD Treatment System

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An Ecological and Physical Investigation of Pittsburgh Hillsides



“No city of equal size in America or perhaps the world, is compelled to adapt its growth to such difficult complications of high ridges, deep valleys and precipitous slopes as Pittsburgh.”

— Frederick Law Olmstead, Jr.

After a year of research, *An Ecological and Physical Investigation of Pittsburgh Hillsides* has been released describing the beneficial role that the natural wooded hillsides play in the City of Pittsburgh. Funded by the Heinz Endowments and managed by the Allegheny Land Trust, the study will support the work of the Pittsburgh Hillside Committee that was established by the City Planning Department in 2002. The study, prepared by a team of professionals from Carnegie Mellon University, the University of Pittsburgh and Perkins Eastman focused on the steep slopes that account for approximately 11% of the landscape within Pittsburgh’s city limits.

An Unique Urban Form

“We need to rethink how we value our urban environment for what we have traditionally valued does not necessarily result in sustainable and livable cities. This urban landscape and built form should be protected, celebrated and promoted as uniquely Pittsburgh.” — Stephen Quick, Urban Designer & Architect, Perkins Eastman

Urban designer and architect Stephen Quick of Perkins Eastman discovered that Pittsburgh’s pattern of development is quite unique among hillside cities throughout the world. The arrangement of the physical topography created by the downward scouring of the rivers has created a series of portals, corridors and rooms. Pittsburgh’s growth has responded to these features over a century to create a unique and

distinctive urban pattern. Neighborhoods nestled in pockets of green space throughout the city are often physically defined by steep slopes or separated by long ribbons of wooded hillsides that provide dynamic backdrops when viewed from public vantage points.

An Urban Forest

Ecologists spent time in the field to investigate the diversity of plant and animal species. The city’s largest masses of forest captured the attention of the team’s ecologists. Some forests are large enough to have

“Surprisingly, the majority of tree species on the steep hillsides of Pittsburgh that we sampled were native species. The hillsides of Pittsburgh appear to function as refugia for native species of the

The national AIA has announced that Perkins Eastman’s portion of the hillsides Study received AIA Honor Award in Regional & Urban Design. You can read about the award in [this architect article](#). Please scroll down to last project listed.)

The award will be presented in May 2007 during the AIA Convention in San Antonio.

At the AIA Design Awards Ceremony on October 25, 2005, *The Hillsides Study* received an **AIA Pittsburgh Honor Award for Regional and Urban Design**. The jury, consisting of three architects/urban designers from Seattle, had high praise for the project and David Miller FAIA of Miller/Hull, the head juror, made special note of how the project captured the essence of Pittsburgh (what differentiates Pittsburgh) and showed a path to take the city into the future.

The Hillside Steering Committee has released a report, [Opportunities for Hillside Protection](#)

what the scientists call an “interior forest patch”, which means that there is at least 100 meters of buffer around the central core of a forested area. Interior forests provide a special habitat for animal species that require solitude and large areas to roam. Trees in excess of 3 meters in circumference and evidence of black bear were found within the City limit.

region.” —
*Dr. Susan Kalisz, Ecology
Professor, University of
Pittsburgh*

(171 KB pdf). This report is a condensed version of the information presented below and, in addition, has recommendations for the City of Pittsburgh Department of City Planning.

“Natural systems provide a wide variety of services that have economic significance, and those services become diminished through substantial natural system alterations, making life more costly or less enjoyable.” —
*Dr. Stephen Farber,
Environmental Economics
Professor, University of
Pittsburgh*

Sustainable Economic Benefits

From an economic perspective, the findings suggest that when densely wooded slopes are kept in a natural condition, they provide a variety of public benefits. Based on studies conducted in other parts of the country, natural areas can enhance adjacent property values. Woodlands reduce storm water runoff and flooding and help to stabilize the slide prone soils and geology of our region. Urban woodlands are especially

valuable in the role they play in maintaining air quality. They can act as a carbon sink, absorbing carbon dioxide and releasing oxygen. Through evapo-transpiration, trees and other types of vegetation can also help abate the heat generating effect that cities do have on the climate.

Hillside Protection is Legally Defensible

Research by the team’s legal expert suggests that the steeply sloped hillsides can be protected through zoning. Because hillsides provide a host of public benefits when left intact and because the risk to the public health, safety, and welfare can increase when they are disturbed, protecting hillsides from disturbance through legislation is possible.

Municipalities in Pennsylvania are adopting and enforcing codes to limit disturbance of sensitive environmental areas, such as steep slopes, and the courts have upheld their authority to do so. The studies uncovering of a distinctive hillside development pattern unique to Pittsburgh, can provide foundation for a zoning initiative to sustain the pattern.

“Our courts have come to recognize the importance of zoning as a tool to protect the natural character of the community and to prevent the harmful consequences of development in hazardous areas.” —
*Cyril A. Fox, Esq., Emeritus
Professor of Environmental and
Municipal Law, University of
Pittsburgh*

The study was lead by:

- **Tim Collins**, M.F.A., Carnegie Mellon University, Ecological Investigation
- **Roy Kraynyk**, Land Protection Director, Allegheny Land Trust
- **Stephen Quick**, AIA, Perkins Eastman



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- **Susan Kalisz**, Ph.D., University of Pittsburgh, Ecology
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- **Kostoula Vallianos**, M.E.M.

The Hillside Committee will consider the following reports as they finalize their report to the City Planning Department. The reports were authored by [3 Rivers 2nd Nature](#) project in the [STUDIO for Creative Inquiry](#) at Carnegie Mellon University and [Perkins Eastman](#), a leading international architectural design firm. Also included are maps referenced in the reports.

To view and print these files, you will need to use the free [Adobe Reader](#). If you do not have Adobe Reader installed on your computer, you can download it from the [Adobe website](#).

1. 3 Rivers 2nd Nature Report for Committee Review

- [Executive Summary](#) (150 KB pdf)
- [Ecological Report](#) (7.8 MB pdf)

2. Perkins Eastman Report for Committee Review

- [Cover](#) (99 KB pdf)
- [Executive Summary](#) (418 KB pdf)
- [Economics of Hillside Slope Development](#) (192 KB pdf)
- [Built Form and Urban Character of Pittsburgh Hillside](#) (11.5 MB pdf)
- [Land-Use Controls for Hillside Preservation in the City of Pittsburgh](#) (191 KB pdf)



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