BEAM

Building Environments for Active Minds

a design proposal for the Blakely Program Center
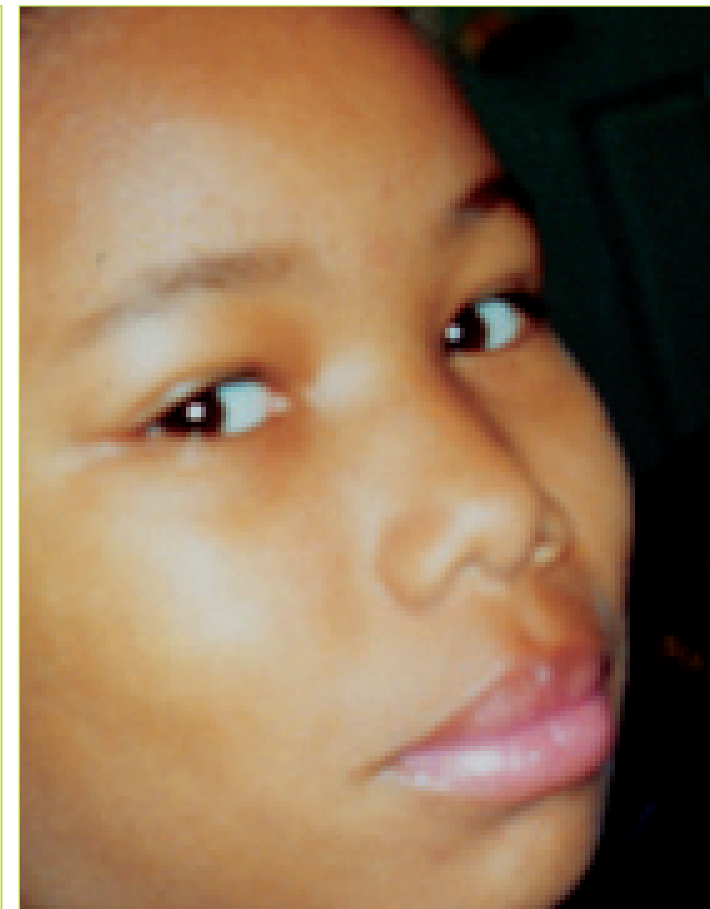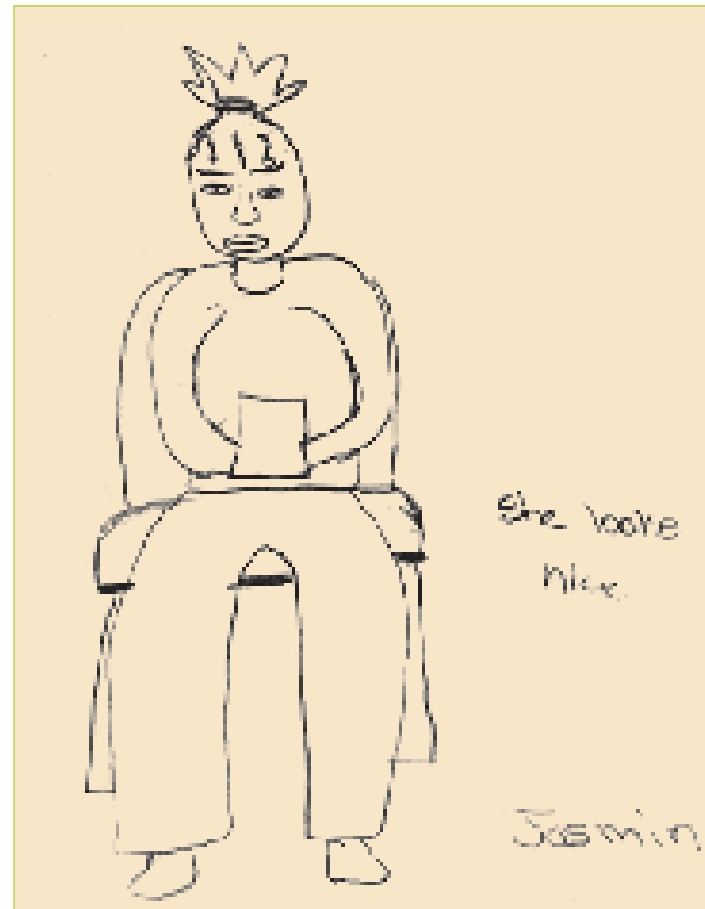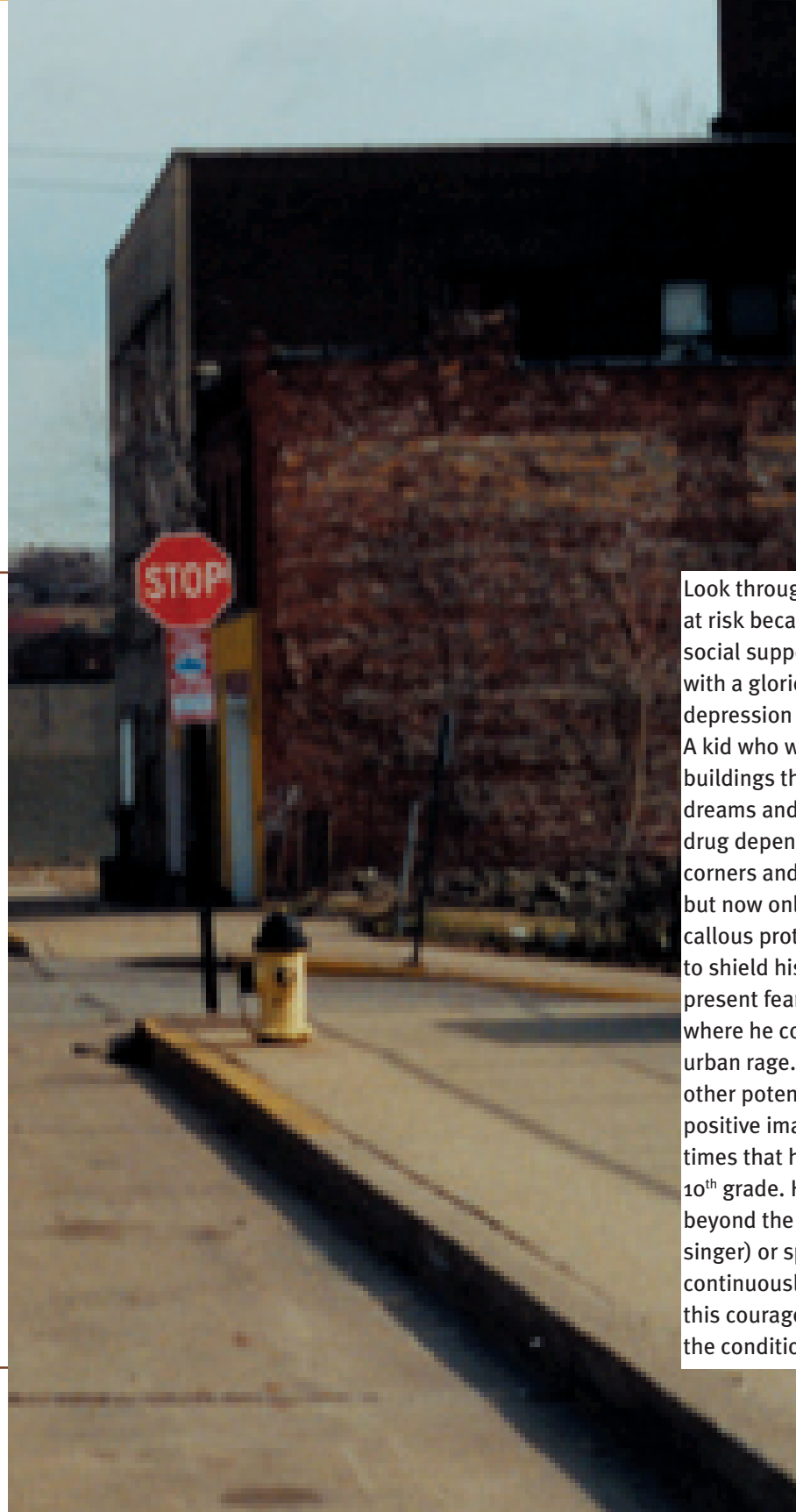
Eric Anderson, Assistant Professor
School of Design
Carnegie Mellon University
Product Design

Kristin Hughes, Assistant Professor
School of Design
Carnegie Mellon University
Visual Communication

"ENCOURAGE STUDENTS TO BE LIFELONG LEARNERS BY FRAMING THEIR LEARNING EXPERIENCES WITHIN THE CONTEXT OF THEIR LIVES."

Look through the eyes of a fourteen year old kid, labeled at risk because of the lack of home, community and social support. A kid who walks through a neighborhood with a glorious past but which is now only known by blight, depression and the propensity to be overlooked.

A kid who walks past the haunting shadows of condemned buildings that were formerly thriving business – broken dreams and broken spirits which reflect the unemployed and drug dependent residents who routinely gather on various corners and in dilapidated doorways that once invited hope, but now only despair. A daily walk that forms yet another callous protective layer over his heart and mind necessary to shield his realities and allows him to manage the ever present fear of being in the wrong place at the wrong time where he could easily become another victim of random urban rage. A journey where advertisements of alcohol and other potentially addictive substances overshadow the few positive images in the community. A life so challenging at times that his goals have been reduced to just getting to the 10th grade. His dreams so constricted that they seldom aspire beyond the stereotypes of being an entertainer (rapper or singer) or sports figure (football or basketball player) that continuously flow through multiple media channels. Visualize this courageous kid who symbolizes many of the kids lost to the conditions of urban poverty.

THE FUTURE IS NOT A PLACE WE ARE GOING TO, IT IS ONE WE ARE CREATING. THE PATHS TO IT ARE NOT FOUND, BUT MADE. THE MAKING OF THESE PATHWAYS CHANGES BOTH THE MAKER AND DESTINATION. UNESCO, "QUALITIES REQUIRED OF EDUCATION TODAY, 1989, P. 9
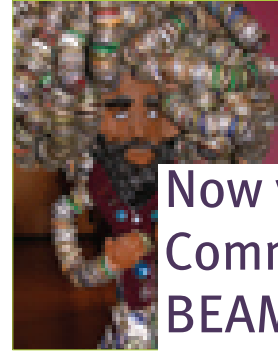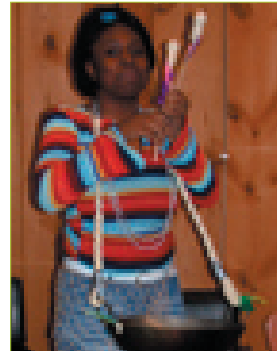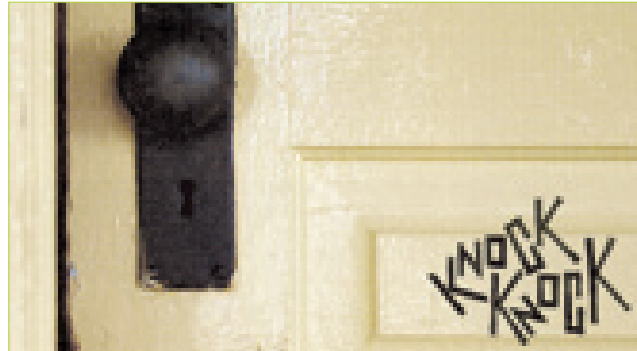
Now visualize this kid reaching his destination, the Blakely Community Center and its new creative learning environment BEAM (Building an Environment for Active Minds) — designed to nourish the emotional, intellectual and creative energies of its participants. This is his second visit to an environment that he could never have dreamed he could experience. As he climbs the steps he feels a sense of hope knowing that here, at this place he can be himself. He walks through the main entrance and up the steps of the grand foyer. He is drawn left into the hallway gallery and sees the wonderful images of photography, drawing and objects that he and others produced just the day before. Now he looks ahead toward the blur of activity of the youth engaged in different programs and activities. His excitement grows because this day is another where he will discover and explore that he is special and his thoughts and ideas are valuable.
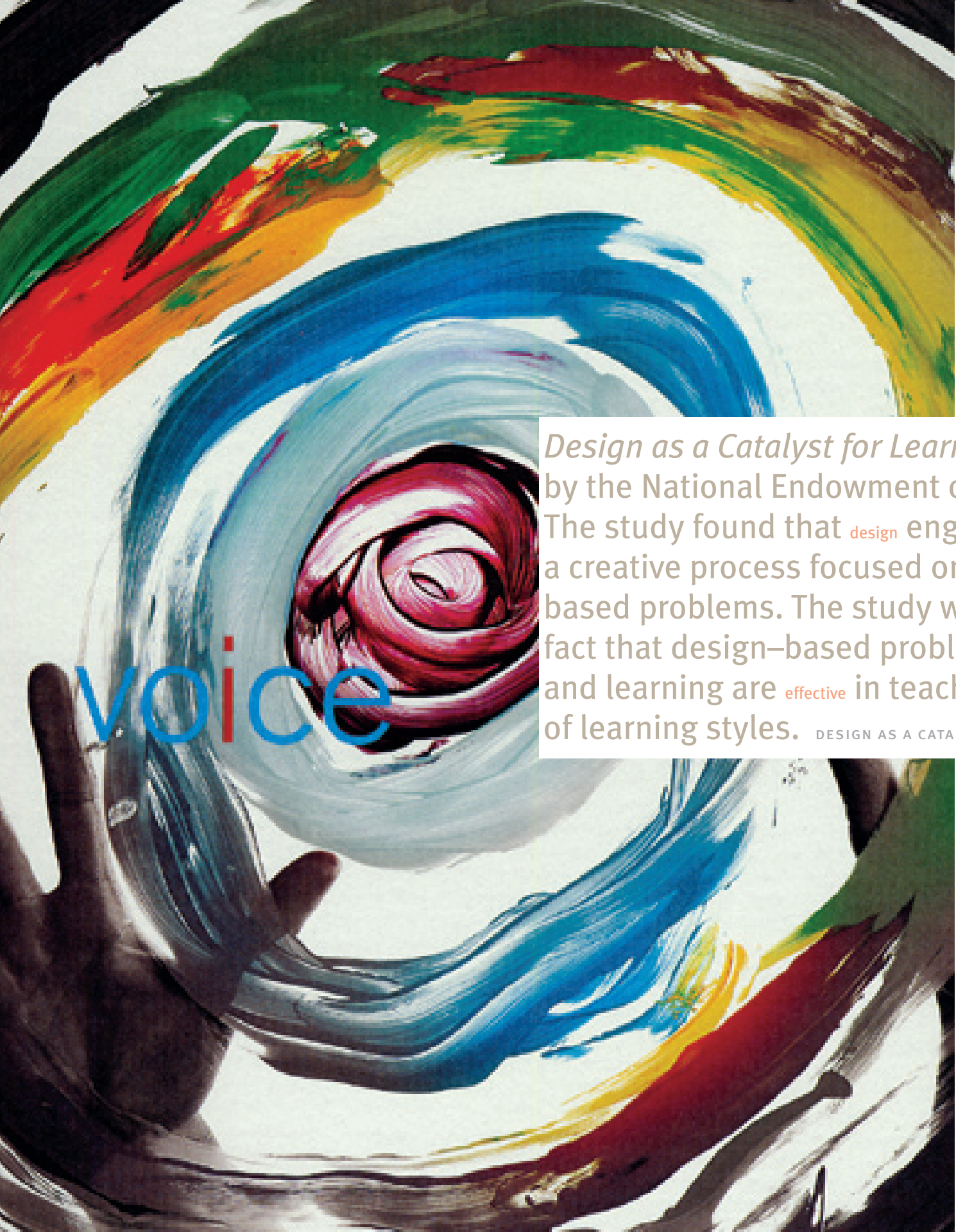
voice

Design as a Catalyst for Learning was a study conducted
by the National Endowment of the Arts in 1998.
The study found that design engages students in
a creative process focused on solving discipline
based problems. The study went on to illustrate the
fact that design–based problems' for teaching
and learning are effective in teaching a wide array
of learning styles. DESIGN AS A CATALYST FOR LEARNING, BY MEREDITH DAVIS
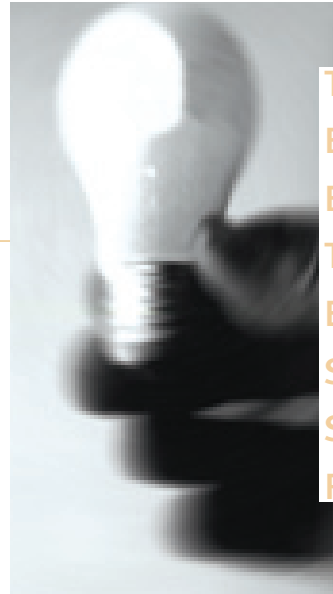
background

texture d

photographs by John Brooks

The Hill House Association focuses on the needs of the African-American community. Services include after-school programs, summer camp, programs for single mothers and for fathers, and the Hill District Community Collaborative. Through its various programs, the Hill House reaches virtually every resident of the area and cooperates closely with public schools, churches, tenants' associations, and other community organizations. These programs serve several crucial purposes: providing care for children whose parents are at work; offering tutorials and other instruction for children of various ages.

Although all these programs are positive, the Hill House struggles to provide services and maintain programs in an atmosphere of sharp economic decline throughout Western Pennsylvania. Appreciated and utilized by residents across the District, the Hill House programs and staff cannot answer the growing demand by parents, teachers, and the children themselves. Under served by the resources and agencies of the city and county, staff and residents have struggled to keep programs afloat, to develop new programs, and to attend to the demands of children entering a complex technological and global environment. Each new decade brings new challenges to children in all neighborhoods, but especially to children whose neighborhoods do not receive extensive services and resources from the surrounding metropolitan area.

Over the past year we have begun to developed a relationship with the community, the staff and the children that utilize The Hill House's resources. Through conversations, activities, observation and active listening we realized that there was a great need to develop an arts initiative within the Hill House.

CURRENTLY, THE HILL DISTRICT SUFFERS FROM HIGH RATES OF POVERTY, CRIME, DRUG USE, JOBLESSNESS, AND LIMITED EDUCATIONAL FACILITIES. POVERTY IN THE HILL DISTRICT IS PRONOUNCED, WITH 56.2% OF THE POPULATION HAVING AN AVERAGE ANNUAL INCOME OF LESS THAN $10,000. THESE ISSUES ARE INDICATIVE OF PROBLEMS FACED BY MANY INNER CITIES THROUGHOUT THE NATION BUT THE HIGHER CONCENTRATION OF THESE PROBLEMS WITHIN THE HILL DISTRICT ARE UNIQUE WITHIN PITTSBURGH.

BEAM

Building Environments for Active Minds

TO GROW

BEAM OF HOPE

BEAM OF MAJESTY

TREE

BRANCH

SUPPORT

STRUCTURE

RAY OF LIGHT

BEAM is a place to:

– explore and experience

– discover and value learning

– emphasize development of problem-solving skills

– stimulates positive response to social change

– understand self and appreciate others

– promote leadership skills

– accept diverse ideas and values

– encourages creativity in everyone

– bridges different curricular activities (science, fine arts, etc.)
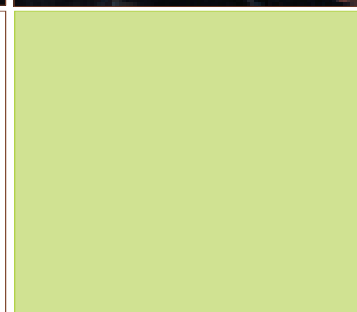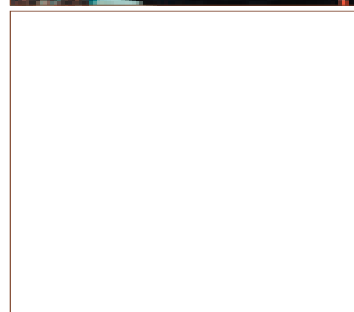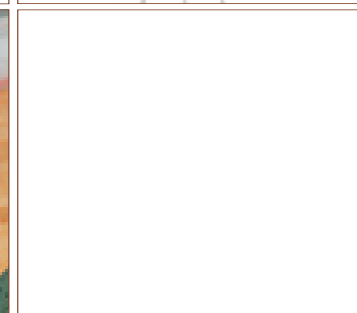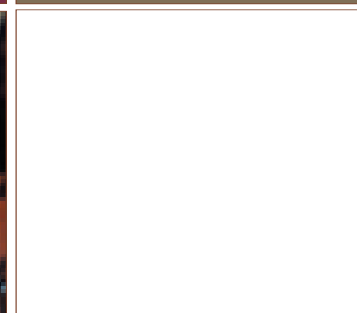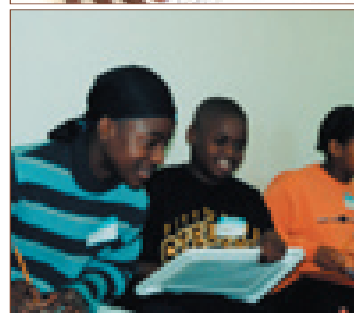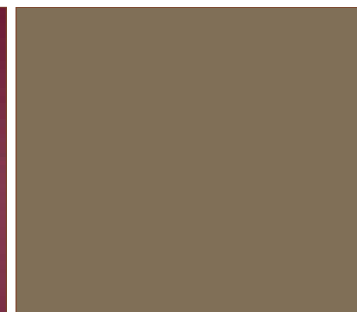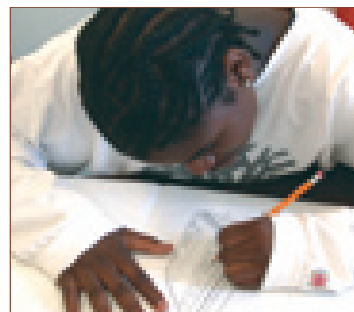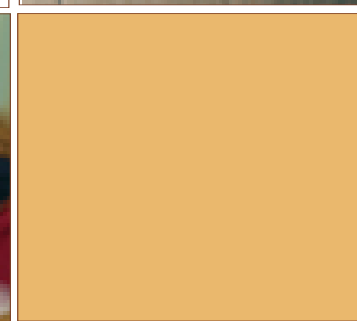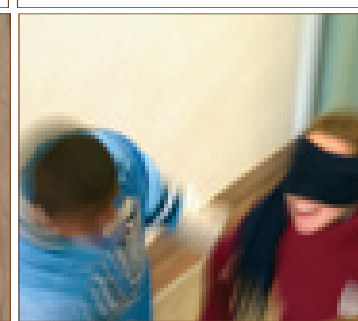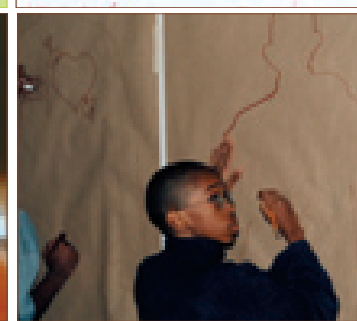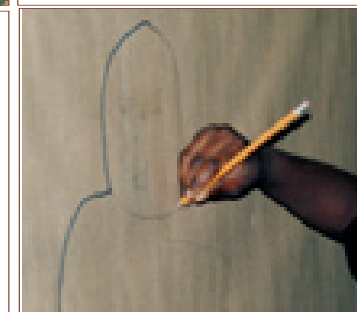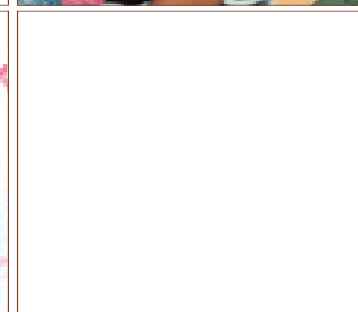
"IT IS POSSIBLE TO DESIGN SPACES ALTERNATIVELY FROM THE TRADITIONAL WAYS: SPACES THAT ARE SOFTER, LESS RIGID, MORE OPEN TO THE INDETERMINABLENESS OF EXPERIENCE. THE ENVIRONMENT IS CONCEIVED NOT AS A MONOLOGIC SPACE STRUCTURED ACCORDING TO A FORMAL FRAMEWORK AND A FUNCTIONAL ORDER, BUT AS A SPACE THAT IS GIVEN SHAPE AND IDENTITY BY THE RELATIONSHIPS CREATED WITHIN IT. A SPACE, THEN, THAT IS CONSTRUCTED NOT BY SELECTING AND SIMPLIFYING THE ELEMENTS, BUT THROUGH FUSION OF DISTINCT POLES (INSIDE AND OUTSIDE, FORMALITY AND FLEXIBILITY, MATERIAL AND IMMATERIAL), WHICH CREATES RICH AND COMPLEX CONDITIONS." CHILDREN, SPACES, RELATIONS, EDITED BY GIULIO CEPPI AND MICHELE ZINI

vision

There is a critical need in the Hill District for an environment that will allow program developers and the community to help foster new ways of seeing, discovering, learning and problem solving. We propose BEAM; a creative expression and learning support center that allows one to hope, dream, heal and grow. In this studio-like environment participants will be encouraged and supported to learn through experimentation and discovery. Projects will be developed to stimulate verbal, visual, and critical thinking skills. Participants will be taught to learn how to learn and to reason, developing important life skills, which will empower them to succeed in a rapidly changing culture. Using design activities to construct unique learning opportunities, this model would additionally look to engage participants to use their own voices and ideas to identify, understand, and express problems creatively.

The Hill House Association has identified visual literacy (the ability to see image based information through the mind's eye and the skill to communicate it to others through drawing and making) as affecting performance in the school, work and community – which is not uncommon in many poverty stricken urban communities. Development of activities in this project-based learning environment will better support social, cultural and cognitive needs and provide a base for integrating programs into a larger vision of learning. BEAM will provide a safe, nurturing and stable environment that will encourage and support kids in their learning through two important intertwined approaches: first, a uniquely created space that is designed to remove the isolation of physical and psychological walls which prevent peripheral interest, understanding and learning; and second, influencing existing activities and fostering new experiences through the methodologies of design. This synthesis between thinking and making, together with an emphasis on visual literacy, will allow kids to learn how to reason, while developing Important life skills that will empower them to become proactive participants of their own education. Ultimately, making healthier decisions that affect their lives and increase their chances of success in a rapidly changing culture.

Our main objective is to plan, design and build the necessary space to promote creativity and experimentation.

PROGRAM COORDINATOR, DESIGN TOOL KIT & TRAINING

One of our main concerns and ultimate objectives with this project is to create a space that lives beyond the design and initial plan and grows into something beyond our imagination.

Along with the design of the space we will conceive a "Design Tool Kit" which will contain components, project examples, strategies, and other necessary artifacts to serve as a foundation for programming and implementation within the environment. The kit will be designed in collaboration with the School of Design, BEAM coordinator and staff. By providing a framework for the education on how to use it as a tool will hopefully enable staff and community partners to work effectively in the new environment. The tool kit will be a living product —designed to transform as new ideas emerge from the stakeholders; thus keeping activities fresh and better ensuring a sustained growth for the environment.

The need for a new hire is essential for the success and growth of this program. The BEAM coordinator would be in charge of maintaining the vision of BEAM. This person would be responsible for creating and fostering a dynamic, relationship with the Hill community and the local arts community of Pittsburgh, providing them with enough incentive to want to be continually engage with BEAM.
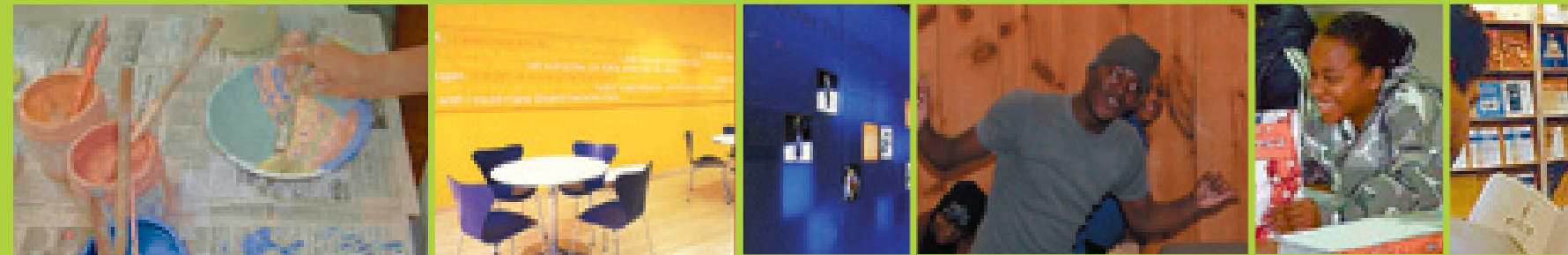
DRAWING

PAINTING

CONSTRUCTION

BUILDING

MODELING MATERIALS

MANUAL TOOLS

HAND-HELD POWER TOOLS

PHOTOGRAPHY

VIDEO

COMPUTERS

DRAMA

PERFORMANCE ART

BEAM requires active participation.

BEAM will utilize the space as an experimental teaching tool that will contain the necessary items to enable participants to express ideas visually through various materials and methods.

MULTI-PURPOSE

FLEXIBLE WORKSTATIONS

DURABILITY

INTERNAL AND EXTERNAL PROGRAMING

CONFERENCE AREA

RESEARCH / READING AREA

PERSONAL LOCKERS

PRIVATE OFFICES

WIRELESS WORKSTATIONS

TRANSLUCENT WALL

PIN-UP SPACE

DISPLAY/GALLERY

DARK ROOM

role of technology

One of the roles of architects and engineers is the careful planning of infrastructures –the cables, pipes, and duct work that provide vital services including electricity, water, and ventilation– based upon an understanding of the how the spaces they create are to be used. Two trends continue to push the design of spaces into new territory: the need for flexible environments which can be easily reconfigured to accommodate multiple uses, and the need to incorporate digital technologies into how an environment is conceptualized, planned, and built. An information infrastructure has now become as essential a component of many environments as water and electricity.

This project provides a unique opportunity to explore not only how information technology can be integrated into an environment designed to be easily reconfigured, but to explore how technology can be actively shaped to integrate with and enhance the mission and processes of BEAM. All too often, information technology is accommodated as merely a piece of infrastructure: network cabling will need to go here, a computer will need to go on a desk over there, we need a printer there and a screen there. But Information Technology (IT) plays a significantly different role than a passive infrastructure such as electricity. IT, from personal computers and the Web to digital cable to Palm Pilots and cell phones, is an active force shaping the abstract systems and patterns that are every bit as significant as our physical environments: how we work, how we gather information about the world around us, and how we communicate with each other.

Because the act of creating BEAM is not just an act of space planning, but an act of designing an entire learning system from the ground up, we have the opportunity to ask some very exciting questions: How can we design an infrastructure which will actively, and intuitively, support the needs of students and instructors? How can we use convention models for making in combination with technology to help get kids excited about learning and coming to the center, and along the way teach them vital life skills? How can BEAM be integrated with the wider community and play a role in its revival?

A facility of this nature would strengthen the identity, the sense of place and the quality of experience for people associated with the Hill House. This celebration of creativity in the area would further distinguish the Hill House and become a active example for other community centers to follow.

This proposed learning environment would be designed to support ongoing educational outreach activities and encourage new programming through discovery. The designers of this space each have professional expertise identifying deeper questions, proposing new ideas and managing its implementation to achieve design goals. Our objectives for this environment will include research, conceptualization, development and implementation of well reasoned designs that address the issues identified and goals expressed. As a result of our discussions with the Hill House and preliminary observations, we have outlined the following program procedure for the space design at the Blakely Program Center. From our understanding we have outlined what we believe to be the major objectives of this program sequenced in the following phases.

Over the past two years, the School of Design at Carnegie Mellon has collaborated with administrators and staff at the Hill House to explore new approaches to engaging youth in creative problem solving and learning. Through several projects, a body of knowledge and supporting research is developing to support the larger vision; BEAM.

Drawing workshop ::
Six week program designed to teach the kids the value of learning what they see.

Designin Time ::
Six week project designed so the students could lela.

Connecting Community to Knowledge:
Sustaining a youth inspired library

Current Project: Finished May 2003

The current project - Designing a Youth Library – represents phase one of a two-part concept. It includes children of the community together with two design faculty and design students as team members in researching, designing, and installing a modest but uniquely engaging library space. The project objectives include:

This project continues to be a special learning opportunity for the residents of the Hill District and also for the School of Design. The scheduled of completion is May 2003, with the results being a functional space driven by Scholastic Books and Lexel Learning system.
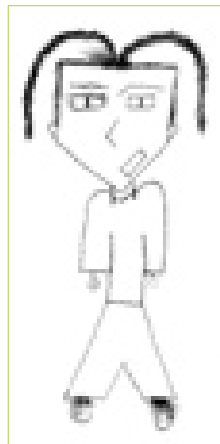
SELF PORTRAITS
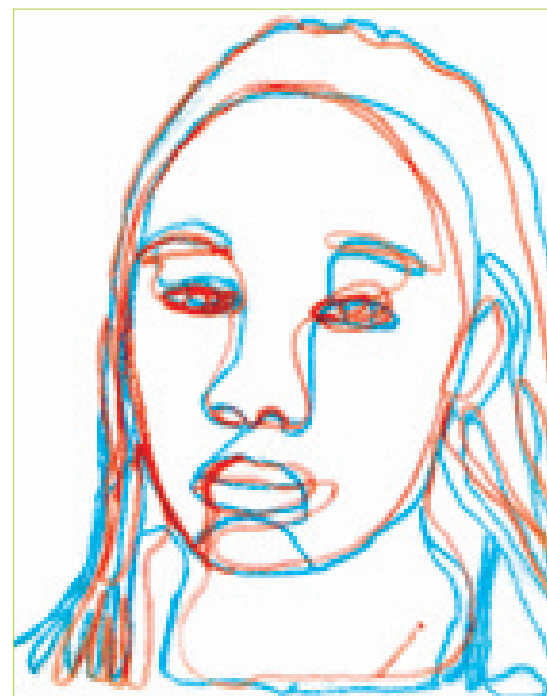
time: 1 hour to start and finish project
· teamwork!
· staff became activity involved in the making and facilitating
· students learned to work quickly and intuitively
· share ideas
· delegate tasks

6 week workshop

BEGINNING TO ENGAGE STUDENTS MINDS AND ASK QUESTIONS

This project was is planned for six calendar weeks. Each week had 2 meetings, one evening during the work week and one on Saturday mornings. Total hours per week was between six to eight.

In our six week program we developed multiple projects and activities for the students at the Hill House. All projects allowed students to identify, express and represent themselves through drawing, image manipulation and modeling. The final project was a self-portrait in the form of a working clock. Once the clocks were finished, students and faculty collectively organize an exhibit at Carnegie Mellon, School of Design. The students were allowed to present their ideas to the freshman class and receive comments and feedback on their work. Simultaneously the freshman were also working on clocks, so they present their projects to the students of the Hill House for feedback.
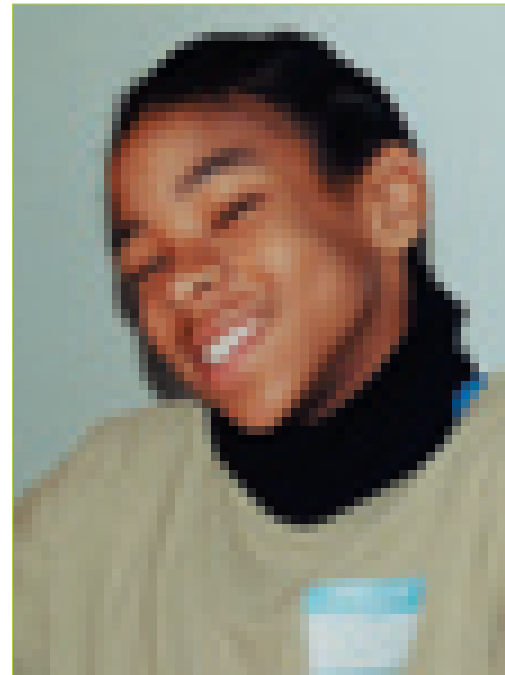
FACES FOR CLOCK PROJECT

PHASE 1 — RESEARCH

Our goals are to develop a creative environment that will engage facilitators and participants in unique ways. To achieve these goals, sufficient research using the traditional methodologies of investigation will be performed including: literature review to discover new knowledge in academic and professional publications; surveying and interviewing to discover specific and unseen knowledge; and observation to discover the specifics of how people perform and function. These techniques will be used in varying combinations to learn as much from a broad population of people including: the Hill House Association's administrators, staff and community participants; community partners of the Hill District; cross-discipline experts who share similar goals/interests; other relevant programs or organizations globally which our research determines to be useful. Further, we will design and use research tools such as questionnaires, scripts, and necessary devices such as audio and image recording (with approval and appropriate release signatures) in order to achieve clear and unbiased information.

PHASE 2 — DESIGN

Having gathered sufficient research we will begin creative conceptualization of the space. This activity will primarily involve sketching and modeling where strategies can be applied and tested at a conceptual level. During this phase we will identify specific possibilities for: spatial functionality and flexibility; activity flow; furniture requirements; flooring; lighting; sound; space identity; any other discovered requirements. Near the end of this phase, we will present 2 to 3 different concepts in the form of manual and digital drawing and modeling. This information will explore a variety of visual and functional directions submitted in sufficient detail so as to accurately depict the suggested concepts to you. The presentation will also include, among other things, renderings, photographs or catalogs of specific items recommended for purchase and/or fabrication as well as paint specifications, lighting, etc. We will prepare a preliminary budget containing estimates as may be required for cost determinations. At the completion of this phase we will mutually consider the best design direction, or combination of suggested directions, and outline plans for further study and design refinement.

PHASE 3 — DEVELOPMENT

We will refine the selected design direction, or combination of directions to incorporate any additional budgetary, aesthetic or functional considerations. Based upon the selected design direction, we will prepare demolition/construction design drawings, specifications, and obtain contractors for bidding and completion of work. At the completion of this phase the basic design direction will have been established.

PHASE 4 — IMPLEMENTATION

Upon approval, we will submit drawings and specifications to the selected contractor and provide construction management and overseeing liaison. The Hill House must approve all cost revisions and miscellaneous directions to the contractor in writing prior to implementation.

thank you.

Official costs estimates and a completion schedule for the design of the space will be provided in detail upon final design and quotations from selected bidders. However for the purposes of discussion, we have provided best guesstimates for the activities and furnishings that may be required to achieve the design intent.

BUDGET OPTION 1	
Demolition	$ 8,100.00
Unknown site conditions	$ 25,000.00
New Construction	
Plan Drawings	$ 8,000.00
Painting	$ 7,000.00
Built-ins	$ 15,000.00
Wall segments	$ 18,500.00
HVAC	$ 10,000.00
Floor	$ 11,800.00
Electrical	$ 9,000.00
Sub-total	$112,400.00
Furnishings	
Furniture, etc	$ 25,000.00
Lighting	$ 9,600.00
Equipment	$ 65,000.00
Graphic implement	$ 10,500.00
Office Furnishings	$ 5,000.00
BEAM Coordinator	$ 40,000.00
Space Cost	$ 17,000.00
Sub-total	$ 172,100.00
Total Construction and Furnishing	**$284,500.00**

GRAND TOTAL (ESTIMATE)	
Design (one year)	**$ 16,000.00**
Construction & Furnishing	**$284,500.00**
GRAND TOTAL (ESTIMATE)	**$300,500.00**

BUDGET OPTION 2	
Demolition	$ 8,100.00
Unknown site conditions	$ 25,000.00
New Construction	
Plan Drawings	$ 8,000.00
Painting	$ 7,000.00
Built-ins	$ 15,000.00
Wall segments	$ 15,500.00
HVAC	$ 10,000.00
Floor	$ 8,800.00
Electrical	$ 9,000.00
Sub-total	$106,400.00
Furnishings	
Furniture, etc	$ 15,000.00
Lighting	$ 9,600.00
Equipment	$ 35,000.00
Graphic implement	$ 5,500.00
Office Furnishings	$ 4,000.00
BEAM Coordinator	$ 36,500.00
Space Cost	$ 17,000.00
Sub-total	$ 122,600.00
Total Construction and Furnishing	**$229,000.00**

GRAND TOTAL (ESTIMATE)	
Design (one year)	**$ 16,000.00**
Construction & Furnishing	**$229,000.00**
GRAND TOTAL (ESTIMATE)	**$245,000.00**