# Campus Constructions: Building Projects in the First Year Design Studio

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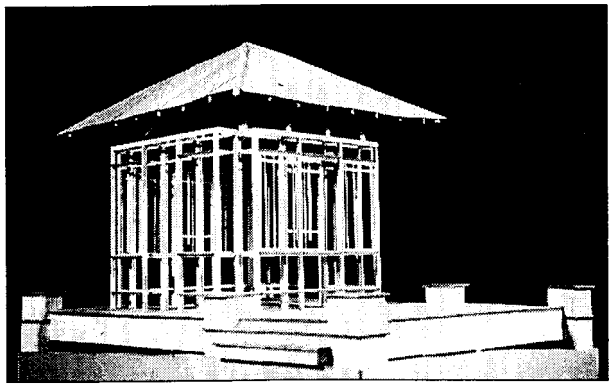
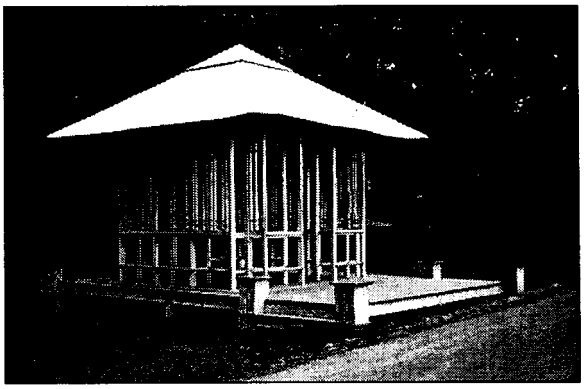
School-based construction projects have proven valuable parts of architectural education; but, at what point in a curriculum should they occur? Most construction programs and projects are upper level undergraduate and graduate courses, usually offered as an elective options or as part of Technology Seminars. In contrast, at Penn State, we have been conducting design and construction projects in First Year Undergraduate Studio. Each spring, students participate in a cooperative effort to build temporary pavilions which, over the years, have served a variety of needs for the university and the community. We have found that this project provides an excellent introduction to architecture for the beginning design student.

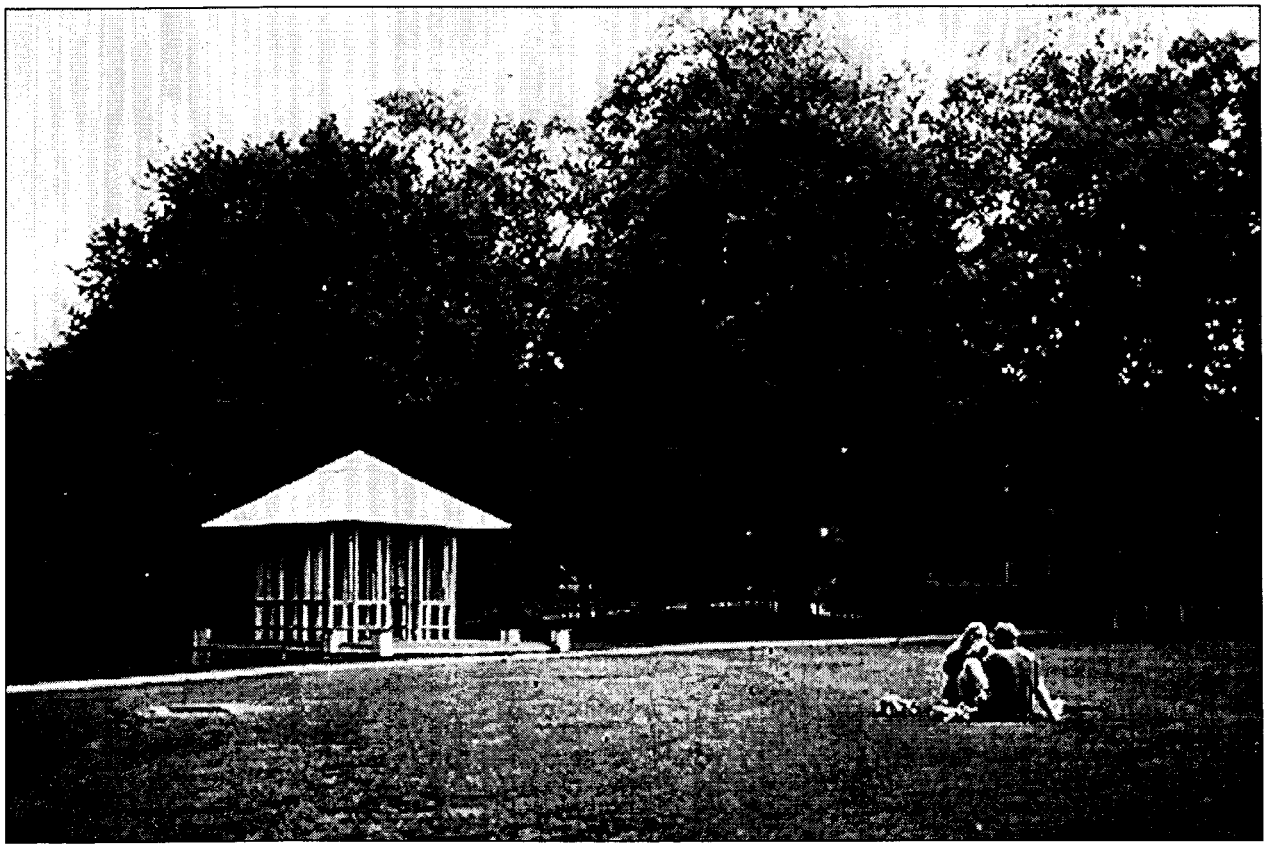
Students are introduced to the process of design as performed throughout the entire project. Not just schematic design, but design at all phases of the design process: programming, schematic design, design development, details, joinery and construction.

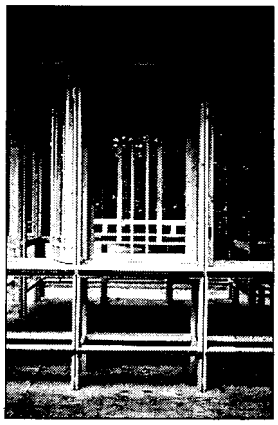
- Students confront the reality and impact of design constraints; such as budget, clients, available materials, site limitations, construction methods, scheduling, etc.
- Students discover the necessity for cooperation in the design process and feel the collective pride that is usually missed by the traditional " one student — one design" studio projects. In the end, all students possess ownership of the design.
- Students must venture beyond the isolation of the studio and confront the challenges of designing in a public setting. They have the opportunity to have a positive impact on the design of campus, a place with which they are intimately familiar. The project has quickly becoming a tradition on campus, with the university community anticipating the arrival of new structures each spring.
- Above all, building projects in the First Year give beginning students the joy of experiencing their designs realized in the world. They conclude their first year of architectural education with the thrill of building. The year ends with the celebration of accomplishment, in contrast to the often anticlimactic "final crit" which many beginning students do not have the experience to effectively benefit from. In the spring, when the campus is filled with parents and alumni, construction projects have given students the opportunity to visit their structures with their family and, with great pride, say, "look what we built."

Building Projects in First Year Studio expose students to with a wider, more inclusive range of issues and opportunities than the traditional "basic design" curricula that, until recently, dominated our foundation program. The exercise is intended to minimize the degree of formal and conceptual abstraction and remain true to the belief that the best way to learn architecture is through architecture.









# SMART is as Smart Does: Architecture and Early Education: A Collaborative Design-Build Initiative

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## INTRODUCTION

Architecture uses the power of imagination to transform the built world. By nurturing both craftsmanship and intuitive knowledge, the creative process of "making" unfolds. It is through this process that thought becomes tangible and the self emerges. This self can only be experienced; it cannot exist as thought alone. In this project, two groups of students harnessed the power of imagination and tapped the process of "making" to create an interactive architectural structure for the new hands-on science center in Bethlehem, PA.

Architectural education programs developed specifically for children, span the gap between architecture and society. Young people, already fascinated by their world, learn about it differently through designing, building, and documenting the experience. This architectural based education builds self-esteem by allowing children to feel part of the immediate world in which they live—they become "somebody". When children have an increased appreciation of their built environment and an understanding of their neighborhoods they feel a part of the social fabric. Is this not also a main mission that architectural educators in the university have in the training of our future architects? Through the use of imagination and the creative act of "making" we re-make the world ours. When this occurs, a social conscience is instilled—rather than authoritatively imposed—in one's consciousness.

## THE COLLABORATION

In the design studio, projects that involve the surrounding community encourage new and imaginative ways of designing and forge relationships between students and the town in which they will reside during their university years. Community involvement instills a sense of social conscience and an increased appreciation of the local environment. This was precisely the goal of the collaboration between the Lehigh University architecture design studio and Archi-Kids, an architectural program for children.

Archi-Kids is a program initially designed to affect at risk inner city elementary school age children. The curriculum provides real life learning experiences in the form of architectural projects conducted within the community in which the children live. The Archi-Kids program operates out of the SMART.

Discovery Center on Bethlehem's south side. The opportunity to design and build a full scale structure within the new facility for the SMART Discovery Center provided an opportunity for collaboration which encouraged community involvement. Children "Archi-Kids" ,teamed with third year Lehigh University architecture students as mentors, became the basis for a teaching collaboration.

The SMART Discovery Center is a hands-on science museum affiliated with the education department of our university. It was established to promote "science education for all" and to provide an arena for alternative community outreachprograms, historical and cultural enrichment events, and collaboration with business and industry. SMART is an acronym for Science Model Area Resource Team. The Center's goals are "to invigorate and improve the quality of instruction in science; attract and involve populations in a science enterprise; and disseminate innovative curricular materials and research to the science education community." Translated, the SMART Center is a place where science and wonder commingle with students and teachers of all ages. The SMART Center fosters learning through active discovery, hands-on exploration, science and math workshops, research programs, the Archi-Kids program, and the Jason project.

In December of 1994 the SMART Discovery Center relocated its offices from cramped quarters on the Lehigh University campus to leased space in a vacated office building. The Center will remain in the temporary location until renovations of the permanent site are completed.(1997) In this new space, the SMART Center's needs presented the opportunity for students to not only design a "real" project, but to actually build designs that would transform an unoccupied shell into a hands-on center providing science education, interactive exhibits and a research center.

The new space was a license for architectural experimentation. We developed a design strategy that coupled university architecture students with elementary school Archi-kids