

Taking School Design to Students

National Clearinghouse for Educational Facilities

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School boards, administrators, and teachers are key decision-makers in the school design process. Others who typically play a role are parents, community members, and business leaders. But when the design process focuses solely on the input and opinions of

adults, it overlooks the perspective of the school's true clients—its students.

Students use buildings differently than teachers and administrators, and they have good ideas about what works and what doesn't. Not surprisingly, schools that are responsive to students' needs and interests work better. Helping to plan or modernize their school also transforms student

attitudes; when given a voice about what they want in their school, they feel excitement, ownership, and pride.

From an educational perspective, involving students in school design provides a rich learning experience. Students must reflect on the world around them and develop practical solutions to everyday problems. Design-based activities make them



Students, the true clients of school design, have an important contribution to make. When given a voice about what they want in their school, students express excitement, ownership, and pride. These decorative tiles were student-designed. Photo courtesy of TMP Architects.

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think about the learning environment, prompting them to consider where and why they learn best. Such activities go beyond traditional lesson plans because students work on real problems in a real context. There are as many “teachable moments” in the school design process as there are student ideas about how schools should be designed.

No single method exists for effectively involving students in school design, but the following seven strategies, based on interviews with architects, planners, educators, and administrators from across the country, have proved successful for productively involving students in the school design process and making it a positive learning experience:

- Use student artwork
- Use disposable cameras
- Host student forums
- Involve students in planning committees

- Organize a student design competition
- Provide design programs during out-of-school hours
- Integrate design activities into class work.

Use Student Artwork

One way students can express their perception of the world is through artwork. Asking students to draw what they want their school to look like can be a powerful tool for understanding those aspects of the built environment they think are important. This is a particularly effective strategy when working with younger children or children with special needs, who may be unable to articulate verbally what they feel and know. Architects frequently ask students to create artwork because it is a good technique for getting them to show how they would design educational spaces. They also can be asked to write narratives to explain and complement their pictures.

School design lesson plans should include clear design criteria. If an instructor asks students to design their “dream school” with little discussion about what designing a school entails, students will likely turn in “dreamy” ideas. If a student draws fast food restaurants for the cafeteria, then one should ask why the student is focusing on the food, why a fast food restaurant is so appealing, and what aspects of the fast food restaurant experience can be translated productively into a new cafeteria design.

Use Disposable Cameras

Like artwork, taking pictures is another way students can communicate nonverbally about what their school experience is like. Providing disposable cameras is an excellent and inexpensive strategy to encourage them to document their learning environment. Students can



Art and photography are important media for student expression in the school design process. Installing student art in the completed school design—as shown in the far left photo—elevates this involvement, and provides a child-centered aesthetic in the educational space. The middle photo was taken by a student documenting the need for greater locker space. At right, children and their teacher work together in an art-based student forum. Photos (left to right) courtesy of TMP Architects, VCBO Architects, and VMDO Architects, respectively.

create photojournalistic essays about things they like and dislike about their school or about what works and what doesn't (for example, where in the school they feel focused and where they feel distracted). Older students with graphic design software skills can edit and modify their photographs digitally. Camera assignments can extend beyond classroom walls and encourage students to reflect on places outside school where they feel they can learn and be productive.

Photographs can spotlight how inadequate some school facilities are. Students in Rural Action's Camera Project were given cameras and asked to document what they liked and disliked about their school facility. They took pictures of rusted plumbing and other maintenance problems and made a PowerPoint presentation to their local school board about deteriorating conditions in their school; the plumbing and maintenance problems were quickly scheduled for repair. The Camera Project

taught students how to advocate for their needs within their community. Debbie Phillips from Rural Action helped coordinate the project and observed, "The students became very engaged. They were able to vocalize what needed to happen in their schools. It was amazing the kind of energy that came out of it. They kept saying, 'Oh! Somebody is listening to us! We have a voice!'"

Host Student Forums

The most common strategy educational facility planners can use to involve students in the school design process is conducting a student forum or workshop. These are easy to put on and can be held any time—during the early stages of a school's design, so student input can be incorporated into the education specifications for the new facility, or later in the design phase to elicit student feedback on various design options. Architects often comment about how they like to place design

models on a table during lunch or recess to gather student reactions and ideas. Such informal forums engage students in the design process, educate them about the role they can play in designing their new school, and ultimately build "buy-in" and excitement from the student body.

Architects and planners find working with students a rewarding and meaningful professional experience. As Katherine Peele of Boney Architects notes, "When we work with students, it always helps us remember whom we are designing for." Steve Crane of the firm VCBO likes how "the ideas come straight from the true client's mouth." Peter Brown of Perkins & Will enjoys the students' honesty and straightforwardness: "The students' ideas are insightful and there is no agenda behind them; they give you the truth straight up." Tim Dufault of the Cunningham Group underscores the validity of students' ideas by remarking, "They know when teaching and learning is effective and when it is not." Jim French of DLR Group's Kansas City office adds that he "never had an experience where the kids didn't want to participate in the school design process."

Student forums may take the form of design workshops. In this setting, architects lead awareness-building

activities in which students are asked to reflect on the role their school building plays in their lives. This “discovery” phase can include such things as taking a walking tour of the school, making lists of building features, and taking pictures. Once students become acquainted with their building, they begin to understand the relationship between the built environment and its users and are able to consider different design options.

Another design activity is the “charette.” The goal of the charette is to generate multiple design ideas quickly. The various designs are then evaluated to determine which ideas are the most effective and appropriate. After the students discuss the strengths and weaknesses of each idea, the workshop facilitator guides them to some consensus about what features they want in their school.

Involve Students in Planning Committees

Including student representatives on school planning committees ensures that students’ voices are heard and their ideas are discussed. Students have opinions about how schools

should be organized and function. Their perspectives are different from teachers, administrators, and maintenance staff.

Successfully involving students on planning committees requires careful consideration of several variables. To give their voices legitimacy within the group, students need to have an equal vote. Decisionmaking and consensus building are difficult processes, so the committee has to respect the perspectives and contributions of all its members, including the students.

There are many ways to select students for the planning committee. Ideal candidates are those who can voice their concerns confidently in front of their teachers, principal, and superintendent, who can communicate their ideas clearly and articulately, and who can work with adults. While student leaders are usually selected as participants, there is value in learning from disruptive, lower-achieving, and disengaged students, too. And, if the design and construction period is not too long, consider including on the planning committee some students who will still be in school when the new facility opens.

Katie was an eighth-grader when she was a member of High School Planning Committee for Independent School District of Round Rock, Texas. “I was not considered a child at the meetings. I was one of the executives working there.” She feels it is important to involve students in the process “because it helps start discussions about what the school should look like.” One of her biggest issues was the monotony of her school’s environment, since that is what her classmates “always gripe about.” “Why does the library have to have plain tables and chairs? They are so boring. Why can’t we have sofas or armchairs? And why do all the tables in the cafeteria have to seat ten people? Why can’t there be tables for four?” Katie, now a ninth-grader, said the experience made her “understand how the school board and planning committee works.” It also changed her perspective on herself and made her want to be more involved in what was going on in her school and community.

Organize a Student Design Competition

Design competitions are similar to science fairs. Under the supervision

Ideal student candidates for school planning committees are those who can voice their concerns confidently in front of their teachers, principal, and superintendent; communicate their ideas clearly and articulately; and work with adults. Photos courtesy of Perkins & Will (left) and Cunningham Group (right).



Student design competitions, classroom curriculums, and after-school programs are excellent opportunities to encourage students to engage in school design.

In Boston, students in the CitizenSchool after-school program apprenticed at a local architectural firm where they created models of their ideas for a middle school redesign. More resource ideas are in the box below. Photo courtesy of SMMA.

of a teacher or design mentor, teams of students conceive of a project, design it, model it, and present it in a competition. The judges, who are design practitioners and educational peers, assess the strength of each design.

Design competitions can take place nationally or within the classroom (for the latter, see the section “Integrate Design Activities into Class Work,” below). Two excellent national competitions are School Building Week and the Earth Apple Awards.

The capstone of School Building Week is School Design Day, an annual event hosted by the Council of Educational Facility Planners, International, the U.S. Department of Energy, and the U.S. Environmental Protection Agency, plus the support of 35 other partners. The goal of the event is to draw national attention to the importance of well planned, high-performing, healthy schools. Now entering its eighth year, it offers a collaborative design competition for middle school students. Over a six-week period, teams of students work with mentors to learn key planning and design concepts so they can design their own high-performing school. Last year, student projects were juried and displayed at the National Building Museum in Washington, D.C.

The Earth Apple Awards Program is an annual, yearlong competition



Student Design Resources

Using disposable cameras:

- Rural Action and the Ohio Camera Project at <http://www.ruralaction.org>

Organizing a design competition:

- School Building Week at <http://www.cefpi.org/sbw/>
- Alliance to Save Energy's Earth Apple Awards at http://www.ase.org/greenschools/earth_apple.htm
- TakingITGlobal 2002 at <http://www.takingitglobal.org>

Offering an after-school design program:

- CitizenSchools at <http://www.citizenschools.org>

Implementing design-based learning activities:

- Learning By Design at <http://www.architects.org/education/>
- American Architecture Foundation's Learning By Design Curriculum at <http://www.archfoundation.org/education/>
- Center for Understanding the Built Environment at <http://www.cubekc.org/>
- Rural School and Community Trust's "Place-Based Learning Workbook" at <http://www.ruraledu.org/rtpportfolio/index.htm>
- Heery International Inc.'s Community Outreach program at <http://www.heery.com/index.cfm?pid=ssscr>

open to any K through 12 school that has affected school energy consumption through student action. The Alliance to Save Energy sponsors the awards as part of its Green Schools initiative. According to the Alliance, winning schools have excelled at integrating energy issues into classroom discussions, promoted energy-saving behaviors, and involved the school and community in energy-saving activities. Projects have also helped students improve their teamwork, problem solving, and stewardship skills. In 2002, students at Eisenhower High School in Rialto, California, received top honors for analyzing their school's performance using the EPA Energy Star rating test and for sharing what they learned with younger students, parents, and community organizations.

Provide Design Programs during Out-of-school Hours

Students spend about 60 percent of their time out of school. After-school, weekend, and summer programs are playing an increasing role in their lives.

CitizenSchools is recognized as a model of effective after-school programming in Boston and has been adopted in middle schools in Houston and San José. At the heart of the program is an apprenticeship curriculum in which “citizens”—artists, architects, lawyers, journalists, trades and craftspeople—volunteer as Citizen Teachers and work directly with 9- to 14-year-old students. CitizenSchools programs culminate in an authentic real-world event known as “WOW!” For instance, apprentices in law

conduct a mock trial, apprentices in journalism publish a newspaper, apprentices in web-design create a website, and apprentices in architecture and planning participate in a design competition.

In 2003, apprentices from four CitizenSchools programs interned at several architecture firms around Boston. The students were assigned to teams that focused on different program areas, then created models and drawings to express their ideas. One team worked on redesigning their middle school. The teams presented their designs at a special “Kids Plan the Future of Boston” forum; entries were judged by local public officials. Such a program prototype can be used anywhere to partner students with architects for developing creative, practical, and challenging learning experiences for students.

Integrate Design Activities into Class Work

Architectural design activities call for teachers to function as facilitators, not as content experts. Similarly, they require students to work in a self-directed manner toward creating a solution to a given design problem. Heery International, Inc., has developed an elementary-level teaching unit in which young children create graham-cracker models of their new school facility while it is under construction. The Boston Society of Architects and the Boston Foundation for Architecture offer professional development workshops for teachers to learn how to use project-based architectural activities in an interdisciplinary

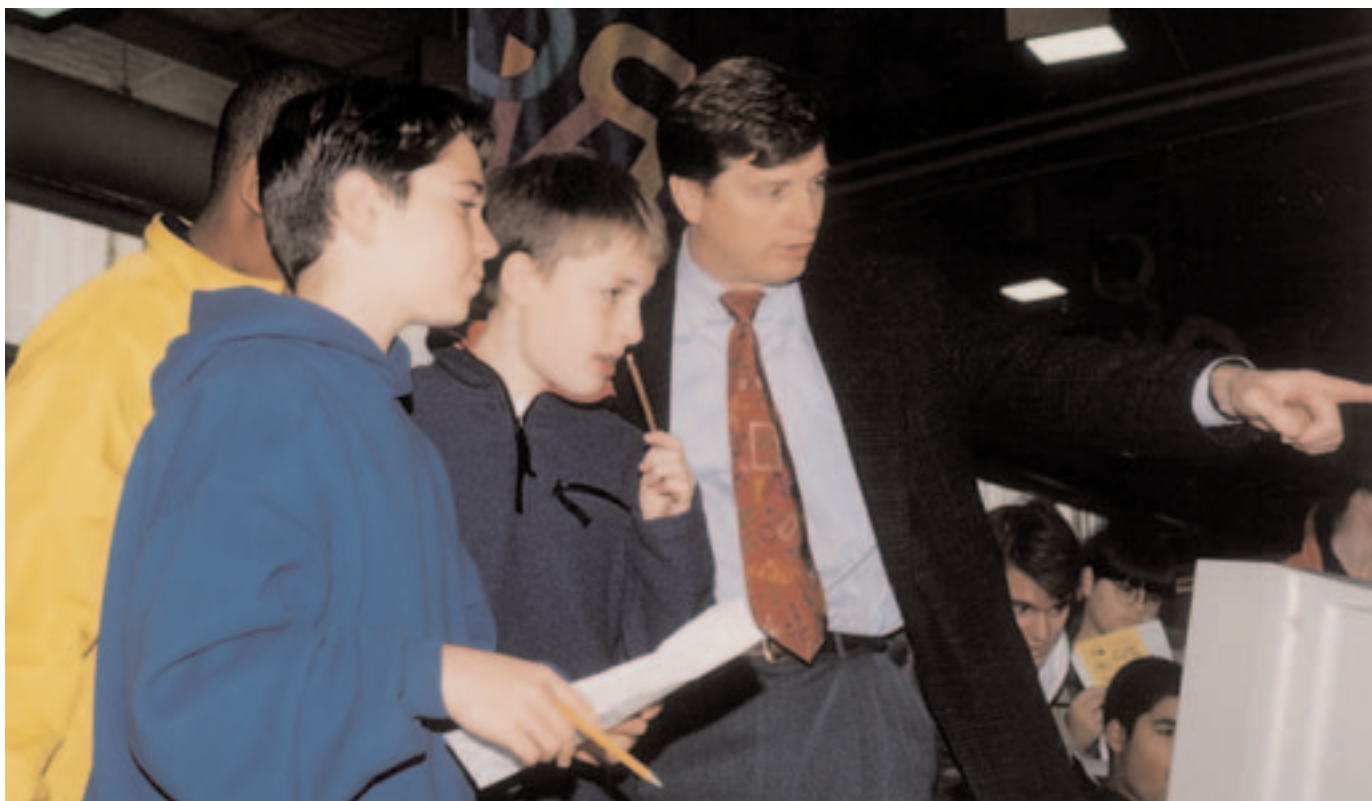
curriculum. The Boston Society of Architects also offers “Places of Learning,” an eight-hour learning unit for students in grades 3 through 12 that exposes them to the design of learning environments.

The Center for Understanding the Built Environment (CUBE) has created the Box City Curriculum, a multi-disciplinary approach to engaging students and schools in community planning and design. The Rural School and Community Trust publishes the “Place-Based Learning Workbook,” in which the students’ town or main street provides the context for learning about the history, culture, environment, and economy of a particular place.

Why Isn’t This Happening More?

If involving students in the design process gives students a rich learning experience and helps create better educational facilities, why isn’t it happening more? In most cases, it is because school officials feel that there is no time to spare for discussions that can potentially postpone the occupancy date of a new school.

Tom DeBolt is the Superintendent of Manassas Park City Schools in Virginia. Over the course of his eight-year tenure, the rate of growth in this community has averaged between six and eight percent a year. In the past six years, the community built a new elementary and high school, and DeBolt intentionally set aside one year to plan each. Since their construction, the two schools have won national awards for exemplary educational design and have transformed the community and its students in the



At a time when planners are seeking to optimize money, space, and time in school design, it is important to remember the vital role students can play in realizing a successful end product. Photo courtesy of VMDO Architects.

process. When asked how he was able to take that much time to include students and the community in the planning process, DeBolt placed construction timelines in a larger picture: “These schools were the largest single investment this city has ever made—\$30 million. How could we not take the time to do it right?”

The rapidly growing Round Rock Independent School District in Texas came up with a creative solution to make time for planning a new school on a tight occupancy timeline. When it floated the bond for the middle school, it added funds to plan and design a new high school, too. By the time the bond for the new high school was issued, the building had already been designed with extensive

student and community input, and the district was able proceed without delay.

School Design as Reflection, School Design as Action

There are two definitions of design: design as reflection, and design as action (Davis et al. 1997). For example, one can ask students to reflect on how well their school is designed. Does it meet the needs of the teachers, students, and administrators? Does it use materials and energy efficiently and effectively? As a building in a neighborhood, does it meet the needs of its surrounding community?

Design can become a way for students to take action to improve their learning environment, too. How would they meet the needs of teachers, students and administrators? How would they design a high-performing, energy efficient school? How would they design a school as a center of the community? When applied to the school setting, design is a powerful exercise because it requires students to think critically about their school and its future possibilities.

At a time when people are seeking to use every dollar, inch, and minute to promote more effective, more personalized, and safer schools, it is important to remember that students can help improve their schools and become better thinkers and problem solvers in the process.

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About the Author

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Additional Information

See the NCEF resource list *Community Participation in School Planning* online at <http://www.edfacilities.org/rl/>

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