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Baltimore Environmental Quality Assessment Project: Baltimore City Public Schools

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Baltimore Environmental Quality Assessment Project

Baltimore City Public Schools

Final Report

June 1, 1996

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EXECUTIVE SUMMARY

Problem

School officials across the U.S. increasingly recognize the impact of environmental quality of the school upon the educational process. A recent report published jointly by the U.S. General Accounting Office (GAO) and the Department of Health and Human Services entitled "School Facilities: America's Schools Not Designed or Equipped for the 21st Century" reports that one in five U.S. children are estimated to be affected by poor environmental conditions. Nineteen percent of schools in the U.S. are experiencing indoor air quality problems, 27 percent are reporting poor ventilation, and 19.2 percent report unsatisfactory heating. Other problems in the nation's schools include lack of building security, poor lighting and insufficient noise control. The GAO estimates a cost of $112 billion to alleviate poor environmental quality in the nation's schools.

Deteriorating conditions caused by poor indoor air quality, asbestos abatement, fire code violations, and deferred maintenance policies are publicly recognized as major contributors of serious health and safety problems for students and teachers. Additionally, environmental quality may affect behaviors, attitudes and performance of students and teachers which may, in turn, have an impact on organizational effectiveness and educational outcomes.

What role these environmental factors play in influencing educational effectiveness and outcomes, and how they interact in contributing to educational quality is less understood.

Approach

In order to clarify the link between environmental factors and the educational process, this study begins with the investigation of environmental qualities directly experienced by students, teachers, staff and parent volunteers in five school settings in the Baltimore City Public Schools. Although the individuals from every group were interviewed, teachers were found to be the most involved in the process.

This study is particularly interested in uncovering those environmental quality concerns that school occupants see as supporting the purposes, activities and educational goals of the school. How well the physical setting responded to the demands of the educational process comprised its environmental quality or value.

In addition, this study has been designed to provide an example of how a school might begin to improve environmental quality through an organizational development process of identifying and addressing mismatches between the facility and its educational activities, programs and goals.

Objectives

The objectives of the Baltimore Environmental Quality Assessment Project project were the following:

(1) Develop an Environmental Assessment Process

Develop an occupant-driven environmental quality assessment process through which environmental quality concerns can be creatively identified, addressed and influenced by school occupants themselves.

(2) Complete Environmental Assessments

Define and assess environmental quality from the perspective of the experiences of students, teachers, staff, administrators, and parent volunteers in each of five Baltimore City Public Schools that chose to participate in this project;

(2) Determine Possible Links to Educational Process

Understand how environmental quality may or may not contribute to the educational process in each school with respect to Student Academic Performance, Student Social Development, and Teacher Instructional Performance; and,

(3) Determine the Role of Facility Management

Understand the role of facility management in maintaining and improving environmental quality.

The assessment process was not conducted to judge the final worth or merit of the school as it relates to environmental quality. Rather, the intent of this project was to provide information and insight to educators useful for improving the environmental qualities of their schools, especially those that may have some impact on the effectiveness of the educational process. A major objective of this study was the clear identification of the perceptions of occupants in these schools. This objective should be seen as a first step in attempting to resolve environmental concerns of issue in these schools.

It is the hope of all involved, that the results of this study be considered an affirmative step toward improving environmental quality in the Baltimore City Public Schools.

Process & Procedures

Each school case study investigation followed a research process in which a selected number of teachers and administrators participated in actively clarifying the scope of the project, identifying and prioritizing environmental quality problems, issues and concerns, and formulating strategies for addressing these concerns. The project activities and assessment process was conducted within a seven month period between August, 1995 and February, 1996. (See Appendix C for a full description of the assessment process including all interview guides, survey forms, and workshop agenda.

Case Study Selection Process

A case study selection process involved the identification of a limited number of then interested Tesseract schools. Once two Tesseract schools agreed to participate, match schools were identified with the assistance of the Baltimore City Public Schools. In addition to these four schools, a fifth 'hybrid' school, that is privately managed, but not a Tesseract school agreed to participate in the study as well.

Match schools were chosen with respect to their physical characteristics, two being self-contained schools, two, plus the hybrid, being primarily open plan schools (with self-contained classrooms).

By August 1995, five schools agreed to participate in the Environmental Quality Assessment Project:

    Tesseract Schools
- Mildred D. Monroe Elementary School #32 (self-contained)
- Dr. Rayner Browne Elementary School #25 (open plan)

    Match Schools
- Coldstream Park Elementary School #31 (self-contained)
- Harriet Tubman Elementary School #138 (open plan)

    Hybrid School
- Robert W. Coleman Elementary School #142 (open plan)

Participant Selection

Once case schools were identified, participants were selected to form a working group that followed the project. Principals from each school identified three teachers, an instructional specialist and at least one parent volunteer who were interested in participating in the project. Students participated through a 5-item survey administered by their teachers. Only working group teachers had their students fill out the survey.

Physical Facilities Inventory

During a first series of field visits in July, 1995, a physical inventory and preliminary walk-through of each school was conducted; a general assessment of the major building systems and functional components were conducted. In addition, preliminary interviews with the principal and the head custodian were conducted to augment the walk-through observations and physical facilities inventory.

Observations, Interviews and Surveys

During the second series of field visits in September, 1995, a full day of observation was conducted within each school which included behavior mapping, informal and formal interviews with teachers and photographic documentation of the school-in-use (See Appendix D: Case Studies for a full desciption of each case).

Principals, the head custodians, working group teachers and parent liaisons and volunteers were interviewed in each school. In addition, during observations, some teachers offered informal interviews to the observer. On average between 6-8 occupants of each school were directly interviewed.

Each teacher was asked to fill out a teacher survey-worksheet, as well as to administer a student survey. The number of potential students participating in the study through the survey averaged three classes of approximately 32 for a total of 96 total students.

Workshops

Prior to the third set of field visits in October, 1995, information gathered previously was tallied and organized into a series of potential environmental quality issues to be discussed during the workshop (See Appendix B: Environmental Quality Issues). Workshop materials included a list of all issues, floor plans showing the location of issues throughout the building, and a presentation board containing photographs of problem areas. Also included were individual issue cards and a blank matrix worksheet for ranking issues by priority (high, moderate, low, none) and the potential impact, if any, on one of three educational outcomes (Student Academic Performance, social development, Teacher Instructional Performance). The workshop, with a working group of four teachers and the assistant principal, lasted a total of 90 minutes.

Planning Workshops

A second and third workshop was conducted in December, 1995 and February, 1996, with School #142 who had requested further assistance in addressing some of the environmental quality concerns identified in the earlier workshop (See Appendix D, Case Study Report: Robert Coleman School #142). During these workshops, the group began to consider options for re-designing the layout of their open instructional areas. In addition, a planning and design workshop was conducted with the school's School Improvement Team in which various design options for new open plan configurations were discussed.

Summary of Findings

Presented here are across-case and between-case findings derived by aggregating data from the separate case study reports of each participating school.[1]

Environmental Assessment Process

This study has found that when school occupants are engaged in an on-going environmental assessment process to identify and prioritize and address environmental quality concerns, issues and problems,

- they are able to go beyond "wish lists" to the formulation of the most critical environmental concerns affecting not only their own situation, but the situation of students and teachers in the entire school;

- they experience some psychological benefits in that they have been able to express their environmental concerns in a systematic manner that they perceive as leading to the potential for change; and,

- **participants experience increased environmental awareness and exhibit an increased environmental competence, an increased sense of control, as a by product of the environmental assessment process.**

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[1] Each report, located in Appendix D, individually documents the environmental quality conditions at each of the five schools.

The process is observed to facilitate not only environmental assessment, but environmental change and action on the part of participating schools. Small by significant environmental improvements have been made in several schools in the study.

Finally, the environmental assessment process offers an extention of the existing School Improvement Team influence into the domain of facility management.

Environmental Concerns

As an outcome of the participatory environmental assessment process a set of environmental concerns surfaced:

- The number of environmental quality concerns ranged from 10 to 27, while the a subset of high priority issues ranged from 5 to 18.

- When environmental concerns are categorized by occupants as partially attributable to facility management, match schools experience as much as 18% more concerns than JCI-managed schools.

- Further, **when only high priority environmental concerns are considered that are categorized by occupants as partially attributable to facility management, match schools experience as much as 38% more concerns than JCI-managed schools.**

- Ironically, JCI-managed schools averaged more environmental concerns per school (20) than match schools (12). Considering that the schools chosen for the public-private partnership were identified by the District as some of the schools with the greatest need of assistance, this last statistic is not completely unexpected. In fact, the school with the most environmental concerns, not perceived by occupants as attributable to facility management was School #142 that did not have the assistance of EAI until later in the program.

- The corollary to these findings is that across all schools in the study, **two-thirds of environmental concerns are perceived by occupants to be either their own school's or their school district's responsibility to resolve or address.**

Participants' response to these environmental concerns -- some they have been acutely aware of prior to this assessment study -- is clearly limited by budgetary considerations. However, the significance of this finding is that it supports this study's premise that occupants should and can be actively engaged in the environmental assessment of their own school rather than relying solely on outside experts (as important as they can be in the process).

Student Environmental Perceptions

Students of selected teacher participants were asked to complete a short five-item survey of their favorite places in school for learning as well as what they liked and disliked about their classrooms in particular.

- When students were asked what was their favorite place in their school they mentioned (ranked most mentioned to least) the gym, classroom, computer lab, cafeteria, library, art and music.

- When students are asked what are fun places to learn in their schools they mentioned (ranked most mentioned to least) their classroom, gym, computer lab, library, art and music room and auditorium.

What students like about their classrooms:

- Students clearly enjoy the aesthetics and appearance of their school. They are very aware of the sensory stimulation of their classroom. It is also clear that they enjoy reading and math and using computers in class in addition to playing games. On the whole, students like their teachers and having their friends in class with them. In addition, they are aware of the orderliness and layout of their classroom.

What students do not like about their classrooms:

- **Students are keenly aware and most concerned about open space being too distracting.** What makes this finding most significant is that these occurrences represent student concerns in only three of the four schools participating. This problem is high on teacher's list as well and reinforces their concerns.

- **Students are also preoccupied with the misconduct of their fellow students that distracts them further from their work.** Noise from other classes accentuates this problem. In addition, many students do not like learning in a messy classroom.

- **Of the remainder of reasons why students do not like their classrooms, the most striking is that thermal comfort issues were rarely mentioned.** This is the exact opposite finding from the perceptions of teachers who ranked physical comfort and health issues as their top priority.

Attributes of Environmental Quality

Environmental concerns were classified throughout the assessment process as belonging to a class of experientially distinguishable environmental quality attributes such as comfort issues, safety issues, adaptability issues, etc. When environmental concerns are categorized as attributes of quality and ranked, a reduced set of critical environmental qualities emerge.

Of the ten attributes of environmental quality distinguished by the working groups, five attributes (listed by rank) are perceived as representing the **highest priority environmental quality concerns** and the qualities they felt they had the least influence over:

1. **Physical Comfort & Health** refers to the degree to which occupants feel the indoor environment meets their physiological needs with respect to thermal and air quality, illumination, noise and odors.

2. **Classroom Adaptability** refers to the degree to which occupants feel that the physical classroom space can be adapted to different and desired educational activities and functions.

3. **Safety & Security** refers to the degree to which occupants feel the school building contributes to protecting occupants from harm, injury, or undue risk.

4. **Building Functionality** refers to the degree to which occupants feel the various places within the school building are functionally compatible with your school's educational programs and activities.

5. **Aesthetics & Appearance** refers to the degree to which occupants feel the school building is attractive and provoking.

Five additional attributes of environmental quality (listed by rank), were mentioned less often and not seen as causing many major concerns and which they had the most influence over:

6. <u>Personalization & Ownership</u> refers to the degree to which occupants feel the school building offers opportunities to create a personal and self-expressive environment and engender a sense of ownership.

7. <u>Places for Social Interaction (Social Places)</u> refers to the degree to which occupants feel that places within the school building provide opportunities for meaningful social exchange and interaction.

8. <u>Privacy</u> refers to the degree to which occupants feel that there are places within the school building which provide opportunities for an individual or a small group to be free from the intrusion of others.

9. <u>Sensory Stimulation</u> refers to the degree to which occupants feel the school building provides a stimulating environment for learning that is safe yet challenging.

10. <u>Crowding/Spaciousness</u> refers to the degree to which occupants feel the school building cannot adequately accommodate the number of students and teaching staff occupying it.

<u>Links between Environmental Quality and Educational Processes & Outcomes</u>

The study found that a decreasing number of high priority environmental quality concerns experienced by school occupants is significantly correlated with higher levels of student performance.

Specifically, when high priority issues expressed by the working groups in each school are correlated with an aggregated percentage of student academic improvement between 1993-1995[2], a significant relationship is observed ($r^2=.81$, $p=.01$). Although this study is exploratory, the sample of schools is small, and the correlation does not suggest a causal relationship, there does appear to be a general emerging pattern between environmental quality and educational outcomes.

To what degree the maintenance and improvement of environmental quality contributes overall to educational quality is unclear from this study. However, it is clear that environmental quality is perceived by the occupants of each school in the study as one of the critical indicators of educational quality along side the more familiar indicators as the school's social climate, student socio-economic background and the quality of the student's home and neighborhood environments.

In order to discover which specific environmental qualities might be linked to educational processes and outcomes, participants were asked to identify those environmental qualities that they perceived are having the greatest impact on various educational outcomes:

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[2]As reported in the Maryland School Performance Program Report, 1995

• **Physical Comfort & Health and Classroom Adaptability** are the environmental quality attributes most often mentioned as having an affect on **Student Academic Performance,**

• **Physical Comfort & Health, Safety & Security, Personalization & Ownership** are the environmental quality attributes most often mentioned as having an influence on **Student Social Development,**

• **Physical Comfort & Health and Classroom Adaptability** are the environmental quality attributes most often mentioned as having an influence on **Teacher Instructional Performance.**

The Role of Facility Management in Supporting Educational Processes & Outcomes

An across case analysis reveals that facility management services are perceived by school occupants as having a critical role in both maintaining and improving several of the environmental qualities identified by working groups in the study.

• **Four out of the total of ten environmental qualities** (Physical Comfort & Health, Safety & Security, Personalization & Ownership and Aesthetics & Appearance), **are seen as being domains of facilities management, and concurrently domains that occupants experience less influence over.**

Between cases, on the other hand, the influence JCI-managed schools differs from match schools in the study.
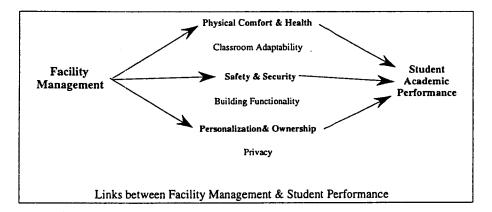
• **JCI-managed schools have 24% less perceived environmental concerns adversely affecting educational outcomes than match schools.**

This suggests that JCI facility management is contributing to the educational process by creating a slightly more favorable physical environment than match schools.

Through these four environmental qualities, facility management is perceived by the working groups as having varying influence on Student Academic Performance, Student Social Development and Teacher Instructional Performance.

• Facility management was found to directly address three of the six environmental quality concerns identified as being most commonly associated with student performance: Physical Comfort & Health, Safety & Security, and Personalization & Ownership.

Links between Facility Management & Student Performance

• Facility management was found to directly address four of the seven environmental quality concerns identified as being most commonly associated with Student Social Development: Physical Comfort & Health, Safety & Security, Personalization & Ownership and Aesthetics & Appearance

Links between Facility Management & Social Development

• Facility management was found to directly address two of the four environmental quality concerns identified as being most commonly associated with Teacher Instructional Performance: Physical Comfort & Health, Safety & Security.

Links between Facility Management & Teacher Performance

Summary of Conclusions

• Many of the environmental concerns that schools confront can only be effectively addressed by educators themselves. Comprehensively identifying the many environmental concerns *from the perspective of educational activities and goals,* is not a collective skill many schools possess. However, all schools, through school improvement teams, have the capacity to deal with environmental concerns.

• The environmental assessment process can be a useful tool in uncovering environmental quality concerns that matter to parents, staff, teacher and administrators, and in so doing can be helpful in continuously improving the physical conditions of learning and teaching.

• Environmental quality is most often perceived by the five schools in the study as the provision of physical comfort and health, classroom adaptability, safety and security, building functionality and aesthetics and appearance.

• Where high priority environmental quality concerns are considered JCI-managed schools had less facility management related concerns than match schools.

• A number of these environmental qualities are perceived by occupants as having an impact on educational outcomes. To further strengthe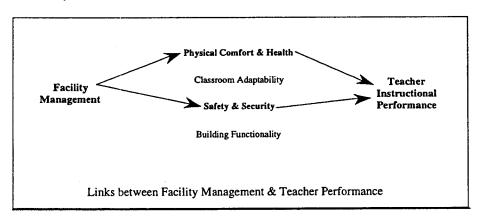n occupant perceptions, high priority environmental concerns have been found to be significantly correlated with percent student academic improvement.

• The domain of facility management is perceived by occupants to include physical comfort and health, safety and security, personalization and ownership, and aesthetics and appearance. Facility management has, in effect, a 40% influence over environmental quality in the study schools, while occupants perceive themselves to influence the other 60%.

• By maintaining these four environmental qualities, facility management is additionally seen as having a role as well in supporting educational activities, goals and outcomes. Comparing schools, JCI-managed schools have been more effective in supporting educational activities than match schools.

• Although there are still problems that exist in each school, overall, occupants are satisfied with their custodial services. Custodial staff in JCI schools were consistently perceived by occupants as going beyond expectations, while at the same time increasing future expectations.

• Environmental qualities of classroom adaptability and building functionality are concerns neither educators not facility management personnel have been able to appropriately address. Many functional problems that mix educational program and facility issues still remain in all five schools in the study.

• In order to address these remaining problems, educators must become more aware of the potentials and opportunities that the physical setting presents them, while facility managers need to become more cognizant of the role of the physical environment in supporting the educational process.

• In short, facility management can potentially increase their influence over the environmental quality in these schools by partnering with educational decision making processes and through increased participation of occupants in the environmental assessment of their own school.

1. THE ENVIRONMENTAL QUALITY ASSESSMENT PROCESS

By the end of the second workshop involving the four teachers and the assistant principal, the group was ready to act. Discussing the problems with introducing yet another outside human service agency into the already tight open space layout consumed much of the group's discussion. The assistant principal declared, "I think its a priority that should be looked at, and one of the things this group can start thinking about for starting to plan for next year in September is 'can we use this space differently?'" She stated that this assessment process has given them impetus to question what they could do to improve their educational environment: "By doing this, we have been able to look at some stuff and say, hey, we have a bad thing, but how can we make it better? How can we use it more effectively?... and that's going to help us."

Participation in Environmental Design and Assessment

An issue that receives much attention in construction trade and school administrator professional journals is the lack of collaboration of school staff in the design of new school facilities (refer any issue of *American School and University*, *CEFPI Journal, School Business Affairs, or American School Board Journal*). Unfortunately, the infrequent collaboration which does takes place rarely includes the public or the occupants for which the schools are intended to support. Several teachers in this study who were present when their schools were being planned experienced first hand the frustrations of non-involvement.

Present models of the educational facility design process were originally developed during the dramatic educational system reforms of the 1960s in which state involvement in school finance and governance expanded to include the planning of facilities. Many educators believe that state legislatures, regulatory agencies and product manufacturers have had more effect on school design and equipment than educators themselves.

Compounding this problem of a lack of design participation is that educators' lack an explicit understanding of how the physical setting affects their teaching and their students learning. Similar environmental concerns continue to surface in school after school. Teachers, in essence, learn on-the-job through trial and error. This is arguably due in part to a lack of in-service training of teachers on how to effectively utilize, maintain and manage classroom space to support their instructional efforts.

Several school teachers in this study indicated that they received one short in-service session with EAI on how to arrange their classrooms to accommodate a cooperative learning strategy. However, the prototypical plans they were given were apparently too generic for their particular circumstances. (The researcher was unable to obtain a copy of this prototypical plan, further evidence of the lack of value the plan had for teachers in this particular school).

Some educational researchers suggest that teachers have not been trained to look at the environment in non-traditional ways in order to organize space to maximize learning areas, relieve crowded conditions, and to visualize classroom space in new and creative ways. What the magnitude of this problem may be, or how to develop strategies for informing teachers in the use of instructional space is presently unknown.

Based on the findings of the previous section, it is clear that occupants of the school, i.e., the teachers, students, staff and administration, all have a role in maintaining and improving the environmental quality of the school. Facility management, traditionally custodial and maintenance services, can and do have a significant role in this process, but occupants have a responsibility as well.

One area where occupants can begin to increase their environmental competence is by participating in the assessment of their current facility and proactively addressing these concerns in concert with facility management.

What has been found in this study, through the work with one school in particular, Robert Coleman Elementary School #142, is that it is possible to proactively address and even solve some of these intractable problems that teachers have lived with for over thirty years in some existing urban schools.

Findings

This study indicates that an on-going assessment process in which occupants participate in the identification and prioritization of environmental quality concerns, issues and problems, can be helpful in continuously improving the physical conditions of learning and teaching.

Participants engaged in a process of environmental assessment are able to go beyond "wish lists" to the formulation of the most critical environmental concerns affecting not only their own situation, but the situation of students and teachers in the entire school.

The process is observed to facilitate not only environmental assessment, but environmental change and action on the part of participating schools. Small by significant environmental improvements have been made in several schools in the study.

The assessment process is observed to provide some psychological benefits to participants in that they have been able to express their environmental concerns in a systematic manner that they perceive as leading to the potential for change.

Participants experience increased environmental awareness and exhibit an increased environmental competence as a by product of the process.

Finally, the environmental assessment process offers an extention of the existing school improvement team skills into the domain of facility management.

These findings can best be illustrated through the case of Robert Coleman Elementary School.

The Case of Robert Coleman

While all five schools in this study were part of an assessment process aimed at improving environmental quality, Robert Coleman provides the closest example of an "on-going" process of improvement.

The process of assessment, initially focused on identifying problems and concerns, is now taking on a life of its own, with these concerns being proactively addressed, and solutions being proposed and implemented. Much of the success of this process of change is the result of dedicated educators willing to take risks with a fresh vision of what their school could be.

For Robert Coleman Elementary School, the process of identifying and prioritizing common environmental concerns has provided new opportunities for reconsidering aspects of their educational program. They realized that resolving their environmental concerns goes hand-in-hand with organizational change.
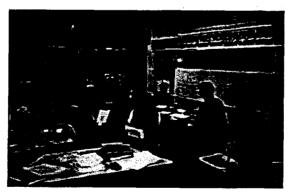
The following is an outline of the process they followed:

Robert W. Coleman Elementary School is in the process of implementing a vision of a community school that offers a one-stop shop interagency environment, one that reaches out to form partnerships with the community in order to more comprehensively serve the families within the community. The vision includes medical and dental care, religious services, family counciling, GED, and other programs. In essence, the school intends to become a complete community resource center. After some thought, the school made the decision to start with the development of a health services center within the school although a health service provider has not been identified as yet. The goal is to find a provider and to provide space within the school by the next school year.

It was within this context that the environmental quality assessment took place. Like the other four schools in the study, the views of students, teachers, staff, administration and parent volunteers were solicited with respect to environmental quality.

Prior to the third visit on October 25, 1995, information gathered from the previous visit was tallied and organized into a series of potential environmental quality issues to be discussed during the workshop. Workshop materials included a list of all issues, floor plans showing the location of issues throughout the building, and a presentation board containing photographs of problem areas. Also included were individual issue cards and a blank matrix worksheet for ranking issues by priority and the potential impact, if any, on educational outcomes. The workshop, with a working group of four teachers and the assistant principal, lasted a total of 90 minutes.

This first workshop proved to be just the beginning for the working group, who were interested in finding ways to address the concerns they had identified.

Discussing environmental concerns during one of the assessment workshops

A second workshop was conducted on December 13, 1995 with the same working group completing work begun in the first workshop. During this workshop, the group began to consider options for re-designing the layout of their open instructional areas on both the first and second floors of the school.

At this time, a teacher survey was administered to gather further information regarding teacher perceptions of environmental quality to see if what the working group was concluding was similar to the entire school staff.

The desire for further structural changes on both the first and second floor open instructional areas were a high priority environmental concern. Teachers in both instructional areas were open to any suggestions that might emerge from the working group.
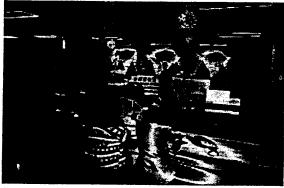
Much of the re-planning of the open space was centered around a more efficient use of the abandoned library/media center area as well as provisions for larger instructional areas for the teachers who needed it most. The biggest puzzle for the group was the principal's vision of locating a new health suite on the second floor. Three separate options were drawn up and discussed informally among the group.

Many of the problems of the second floor open space instructional area were echoed on the first floor. The main focus of discussion centered around the location of the existing cubbies that divided up the open space in a formal way, preventing additional space needed for desired learning activity centers.

In some ways, the principal was way ahead of the working group. She had already contacted a group of volunteers to begin the process of not only reorganizing storage space, but also dismantling the unused media center as a first step in reorganizing the physical space in the school, with the intent of accommodating a health agency suite on the second floor. Once word about the principal's decisions were realized by the working group during the second workshop in December 1995, they analyzed the proposed configurations, identified the ramifications to their own reorganization decisions, and create options to accommodate all user needs.

The options were then formally presented to the principal and the School Improvement Team (SIT) committee, the ultimate decision makers.

On February 13, 1996, a final workshop, a planning and design workshop, was conducted with the School Improvement Team involved, in which design options for new open plan configurations generated during the researcher's absence, were discussed.

Debating environmental planning options at the
School Improvement Team Meeting

Action is now being taken by Robert Coleman to identify and address many of these and other aspects of environmental quality in their school.[3] As a result of the interviews and workshops between September 1995 and February 1996, discussions have begun between teachers, the SIT committee and the principal concerning ways to rethink the entire school facility to more closely fit the educational programs that currently exist, along with those school-community partnerships that will soon be sharing space with the school programs.

As a result of the workshop and discussions with the principal, several options were identified for the inclusion of a new health suite within the school. However, before these options could be developed, several wider implications of bringing in another outside agency into the already crowded school facility needed to be addressed.

At the February 13, 1996 SIT committee meeting, the decision to follow a modified and phased Option A was reached. Storage rooms were to be re-organized, the second floor open space instruction area was to be reconfigured without assignment of particular classes. The issue of whether the health suite would be located on the first or second floor, and other reassignments of classes to newly created instructional areas on the second floor would be tabled until the fourth option could be explored.

On Monday, February 19, 1996, the volunteer group from the Civic Works Project came into Robert Coleman to begin the ground work for implementing the new facility plans. Later in the month, another community volunteer group continued the process. Meanwhile, discussions regarding the rethinking of the educational program and its relationship to the physical structure on the first floor have continued.

The story of Robert Coleman continues and should ideally be an on-going, if not regularly reoccurring, process. With some hard work, the school will be settling into their newly organized space, September of 1996. But, the process does not necessarily have to end there. The educators at Robert Coleman have gained a new awareness of their environmental setting and a measure of competence in confronting problems they knew were there but did not have a way of comprehensively addressing.

Although this level of involvement was not seen as necessary in the other schools in the study, this particular case illustrates what is possible given a great enough desire for change. Many environmental concerns that schools confront can only be effectively addressed by educators themselves. In fact, all schools, through SIT committees, have the capacity to deal with environmental concerns.

The difference, illustrated by this project, is that comprehensively identifying the many environmental concerns *from the perspective of educational activities and goals*, is not a collective competence many schools possess. For instance, many educators grudgingly live with open plan instructional areas for years, conducting educational programs not necessarily suited for these arrangements. As several teachers remarked, "We make due with what we have."

This case study illustrates the potential value of institutionalizing an on-going process of environmental quality assessment that has implications for integrating facility management and educational decisions for the betterment of the educational process.

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[3] See Appendix B5 for a complete listing of the final issues arrived at by the environmental quality assessment working group

An on-going process of environmental quality assessment like the one followed in this study, has the potential for supplying the tools and implements necessary for educators to successfully resolve many such environmental concerns in as yet, unknown creative and innovative ways. In addition, the process can be helpful in continuously improving the physical conditions of learning and teaching.

2. ATTRIBUTES OF ENVIRONMENTAL QUALITY

"During the late Spring, the ambient temperature within the west-facing self-contained classrooms gets hot and stuffy for teachers and students alike. The teachers' desire and longing for natural daylighting, fresh air, spring breezes, and distant outdoor views have been overruled by more critical needs for security from potential intruders, which dictated the placing of metal grates on the now locked semi-transparent Plexiglas windows on the first floor." (Researcher observations)

Defining Environmental Quality

Environmental quality is difficult to define, and most people are aware of it only when they are not experiencing it. Typically, there are layers of environmental qualities that we experience that interact and create within us an overall feeling of ease or discomfort.

This study refers to environmental quality as the less easily definable, and more variable, qualities of the built environment that provide satisfaction to people, its sensory quality in all modalities; the positive and negative effects on human feelings, behavior, performance and meaning.

Environmental quality cannot be pre-conceptually defined but rather, must be discovered: hypotheses about it can be made on the basis of previous experience and insight to be gained through the study of the values, attitudes, and definitions of different groups in the context of a time and culture.

Previous research suggests that environmental quality is grounded on intimate knowledge of the ways people think and feel about environment. Environmental qualities represent or describe the resultant transactions between people and their physical, social and organizational environments.
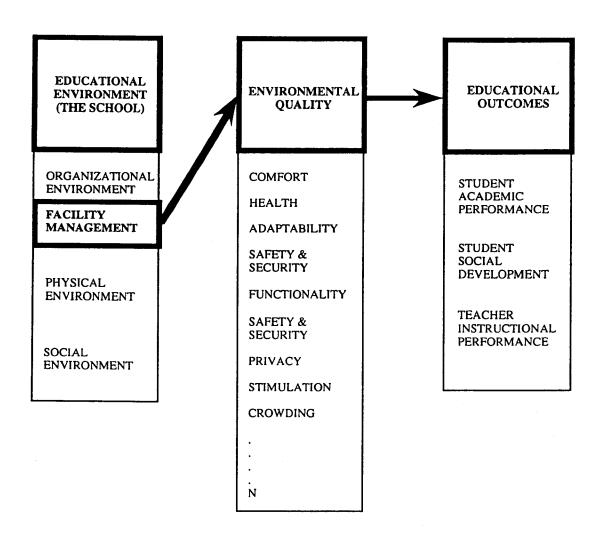
The Physical Environment as a Stage Set for Learning

The physical environment of the school should not be seen merely as a container for a variety of educational activities, but more profoundly as a dynamic stage set that creates and actively supports desired learning behaviors and activities.

Consider an actress who arrives on the stage during a live performance must rely on the physical stage set that provides her with cues, supports her with various props, frames her movements across the proscenium, through a door, or up a narrow staircase to the balcony. At times, the scenery may motivate the actress and even the audience into believing she is the character portrayed. The stage set changes with each new act to support yet another set of events to unfold for the audience, and with it, the mood, lighting, color, the whole atmosphere will be transformed, even though the exact same backdrop set elements may remain. Sometimes, only a new painting is hung, other times a window has new background scenery set behind it modifying one's perception and mood. The overall effect is of the feeling of a different place and time.

A similar process occurs day after day in the school: books change, activity centers relocate, partitions move; the seasons change and so do the displays, rooms are arranged for small group and large group activity; and as new students enter the same classroom, it becomes a different kind of place, even though the same teacher may reside there.

In this sense, the physical environment can be conceptualized as an integral component of the school; one that may have a profound influence upon the individual, the social setting of the school, and the organizational structure as well.

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│  ENVIRONMENT    │         │  QUALITY        │         │  OUTCOMES       │
│  (THE SCHOOL)   │         │                 │         │                 │
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┌─────────────────┐         │ COMFORT         │         │                 │
│ ORGANIZATIONAL  │         │                 │         │ STUDENT         │
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│ FACILITY        │         │ ADAPTABILITY    │         │                 │
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The approach of this study was to investigate the whole setting (organizational, social and physical environments) with special emphasis on the functions of facility management. Environmental quality was defined through the assessment process, beginning with researcher-defined attributes and ending with a subset of attributes as identified by school occupants within the context of locally perceived environmental concerns. Environmental quality is conceptualized as a mediating construct between the actions of facility management on the physical environment on one side, and educational outcomes on the other.

Environmental Concerns

As an outcome of the participatory environmental assessment process a set of environmental concerns surfaced (See Appendix B: Environmental Quality Concerns for a complete description of concerns in each school).

The number of environmental quality concerns ranged from 10 to 27, while the a subset of high priority issues ranged from 5 to 18.

When environmental concerns are categorized by occupants as partially attributable to facility management, match schools experience as much as 18% more concerns than JCI-managed schools.

Further, when only high priority environmental concerns are considered that are categorized by occupants as partially attributable to facility management, match schools experience as much as 38% more concerns than JCI-managed schools.

Ironically, JCI-managed schools averaged more environmental concerns per school (20) than match schools (12). Considering that the schools chosen for the public-private partnership were identified by the District as some of the schools with the greatest need of assistance, this last statistic is not completely unexpected. In fact, the school with the most environmental concerns, not perceived by occupants as attributable to facility management was School #142 that did not have the assistance of EAI until later in the program.

The corollary to these findings is that across all schools in the study, between 62-82% of environmental concerns are perceived by occupants to be either their own school's or their school district's responsibility to resolve or address, not facility management. Their response to these environmental concerns, some they have been acutely aware of prior to this study, is limited by clear budgetary considerations.

Environmental Perceptions of Students

Students of selected teacher participants were asked to complete a short five item survey of their favorite places in school for learning as well as what they liked and disliked about their classrooms in particular. When data is aggregated from the four schools who completed the student surveys a different pattern emerges.

Favorite Places

When students were asked what was their favorite place in their school they responded with this list (ranked from most to least responses):

1. Gym (95)
2. Classroom (40)
3. Computer Lab (18) (Only three schools in the sample that responded had computer labs)
4. Cafeteria (Lunchroom) (17)
5. Library (15)
5. Art (15)
6. Music (3)

The gym was by far the most favored space since students can run and play and "do whatever we want to do" as well as play basketball and other games. Some students enjoyed the spaciousness of the gym and the fact that they often learned new games and had music and parties on the gym. One student in School #25 enjoys the morning meetings that take place in her gym.

The classroom was the second most popular place in the school primarily due to the fact that students feel they "learn lots of fun things," get help on school work and have fun learning and playing games in the classroom. Some students in School #142 mentioned they enjoyed listening to music and watching movies in their classroom. Access to computers was a frequently mentioned reason for chosing the classroom as a favorite place in School #25. Students often mentioned they liked their teachers as well.

Students also enjoy the computer labs in their schools. They like to play games on the computer as well as learn to do math. They enjoy as they say "getting on the computer" which they see as a problem in their classrooms where computers are less available to students. A few students suggested that they each have their own computer at their desk.

The cafeteria is often mentioned by students as a place to eat, talk, play and clean-up. The lunchroom is perceived as a place where students feel they can unwind and be themselves; a place were they can get away with "running around" if they want to.

The library is also mentioned by students as a favorite place primarily for reading books and working on computers. The quiet atmosphere is another reason some students like the library. They often mention their dislike of other students talking while they are trying to read.

The art room is mentioned quite often as well, despite the fact that only three schools in the sample of surveys received have an art room. There are many students who enjoy drawing and artwork and are well aware of their talent in that area. They enjoy getting out of the classroom and into their art class where they can work on projects that interest them the most.

Other favorite places were school specific. Some other places included the Sylvan Learning Center in School #142, the office in School #31 and #32 where students often help adult staff, the spanish lab in School #31 was a popular place, the CCC Lab in School #25, and the sandtable in a kindergarten class in School #25. One student suggested that he liked "everywhere" in the school.

Fun Places to Learn

When students are asked what are fun places to learn in their schools they respond as follows:

1. Classroom (87)
2. Gym (42)
3. Computer Lab (20)
4. Library (19)
5. Art Room (7)
5. Music Room (7)
6. Auditorium (2)

The classroom is by far the most recognizable place students associate with learning. They indicate that "teachers help me learn." Other reasons they choose the classroom as a fun place to learn is their friends are there, the rooms are pretty and nicely decorated, it is fun to go up to the board and solve math problems, they like their teacher, they learn role playing, listen to the teacher tell stories, enjoy math, spelling and reading (although not all the students enjoy these "tasks" as a few stated). One student in School #25 got all excited when he writes about "getting on the computer".

The gym makes a strong second as a fun place to learn. Many students in all schools mention the fun of learning new games especially basketball. A large majority of drawings students drew for the survey were of their performance on the basketball court in their gyms. In addition the basketball, students indicate they have physical education classes they enjoy were they learn to exercise.

The computer lab continues to be mentioned as well. Students indicate almost unanimously they enjoy learning math on computers. The library is a place were students say they can concentrate on their reading and other assignments. Art and Music rooms are also identified as places of learning as well; some students are very explicit about the fact that they learn while completing art and

music projects too. A few students in School #31 mentioned they learned to dance in the auditorium during a dance learning program offered by their school that Fall.

Other places students mentioned as places they enjoyed learning in included a reading lab in School #25, spanish class in School #31, one student in crowded School #142 enjoyed the hallway as a quiet place to go where he and his group could "cooperate." And again in School #142, students enjoy Sylvan Learning Center where they receive prizes and tokens for completing specific learning tasks.

Classroom Likes and Dislikes

When students are asked **what they like about their classrooms** they responded: I like

1. decorations on classroom walls (31)
2. to read books in class (25)
3. math (23)
4. using computers in their class (22)
5. playing games (20)
6. my teacher (18)
7. my friends (10)
8. writing (8)
9. lots of space to do things (8)
10. clean and organized classroom (6)
11. how my classroom is fun and exciting (5)
11. drawing (5)
12. my open classroom with no doors (4)
13. making things (projects) (3)
14. library centers and listening centers (2)
15. not noisy (1)
15. that we are allowed to talk softly (1)

Students clearly enjoy the aesthetics and appearance of their school. They are very aware of the sensory stimulation of their classroom. Teachers are aware of this and do a good job of providing a rich sensory experience for their students. It is also clear that they enjoy reading and math and using computers in class in addition to playing games. On the whole, students like their teachers and having their friends in class with them. In addition, they are aware of the orderliness and layout of their classroom. Finally, they understand that they are asked to be quiet, but appreciate being able to at least talk softly to their friends.

When students are asked **what they <u>do not</u> like about their classrooms** they responded: I do not like
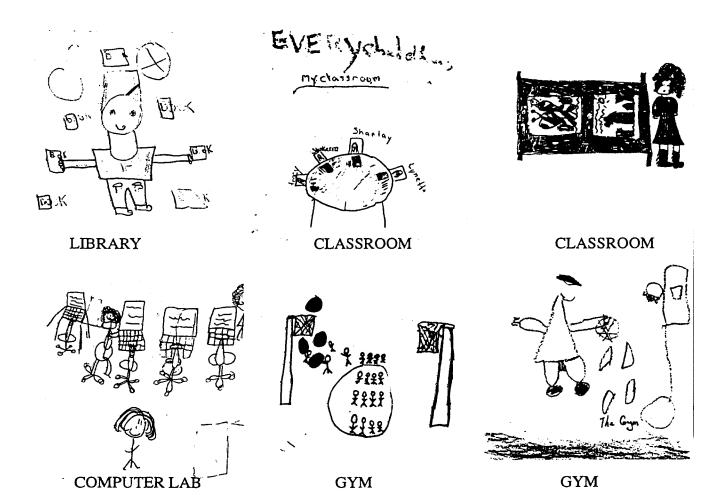
1. that my classroom has no walls, doors and that we are always being disrupted by other classes walking by (23)
2. other students in my class fighting, talking and being trouble-makers (18)
3. the noise from other classes (9)
4. that my classroom is not clean and trashy (9)
5. do not like reading (6)
6. that talking is not allowed (4)
6. the pictures on the walls (4)
6. that we have to do hard work sometimes (4)
6. writing (4)
7. my teacher (3)
7. that there are not enough computers in my classroom (3)

7. math homework (3)
7. staying after school (3)
8. classroom rules (1)
8. that we can't play games in class (1)
8. that the classroom is too cold (1)
8. that the classroom is too hot (1)

Students are keenly aware and most concerned about open space being too distracting. What makes this finding most significant is that these occurrences represent student concerns in only three of the four schools participating. This problem is high on teacher's list as well and reinforces their concerns.

Students are also preoccupied with the misconduct of their fellow students that distracts them further from their work. Noise from other classes accentuates this problem. In addition, many students do not like learning in a messy classroom.

Of the remainder of reasons why students do not like their classrooms, the most striking is the lack of mentioning about thermal comfort issues. Only one student mentioned their classroom as being too cold, while another, in the same school (School #142) mentiond their classroom was too hot. This is the exact opposite finding from the perceptions of teachers who ranked physical comfort and health issues as their top priority. During interviews, many teachers and staff admitted that thermal conditions seem to affect them more than their students, but maintain that thermal conditions can influence student achievement and performance.

LIBRARY

CLASSROOM

CLASSROOM

COMPUTER LAB

GYM

GYM

Attributes of Environmental Quality

Environmental concerns were classified throughout the assessment process as belonging to a class of experientially distinguishable environmental quality attributes such as comfort issues, safety issues, adaptability issues, etc. When environmental concerns are categorized as attributes of quality and ranked, a reduced set of critical environmental qualities emerge.

This study identified ten distinct attributes of environmental quality gained from interviews and workshops. These attributes are rank listed by the number of instances in which they are mentioned as issues or concerns by participants (the highest ranking environmental quality attributes were those that occupants felt they had the least influence over).

1. **Physical Comfort & Health** refers to the degree to which occupants feel the indoor environment meets their physiological needs with respect to thermal and air quality, illumination, noise and odors. Specific issues related to physical comfort and health might include classrooms that are either too hot or too cold, inadequately circulated air, lighting quality, acoustic and noise issues and unpleasant odors.

2. **Classroom Adaptability** refers to the degree to which occupants feel that the physical classroom space can be adapted to different and desired educational activities and functions. Specific issues related to Classroom Adaptability might include the inability to accommodate different furniture arrangements, inadequate room for instructional needs, problems with book, supply, student and personal storage, not enough display space, structural obstructions, etc.

3. **Safety & Security** refers to the degree to which occupants feel the school building contributes to protecting occupants from harm, injury, or undue risk. Specific issues related to safety might include slippery floors, unsafe playground equipment, emergency lighting, child safety in parking lots, while issues related to security might include poor outdoor lighting, unlawful entry of intruders, drugs, weapons, stolen items, or surveillance.

4. **Building Functionality** refers to the degree to which occupants feel the various places within the school building are functionally compatible with your school's educational programs and activities. Specific issues related to building functionality might include problems with conducting cooperative learning in open instructional space, adequacy of space size and configuration of classrooms, assembly spaces or other spaces within the school.

5. **Aesthetics & Appearance** refers to the degree to which occupants feel the school building is attractive and provoking. Specific issues related to aesthetics & appearance might include the appearance and upkeep of the exterior of the building, the visual appearance of the building entrance and lobbies to visitors, cleanliness of floor, wall and ceiling surfaces, the orderliness and cleanliness of classrooms, etc.

6. **Personalization & Ownership** refers to the degree to which occupants feel the school building offers opportunities to create a personal and self-expressive environment and engender a sense of ownership. Specific issues related to personalization and ownership might include student work displays, ability of individual students to personalize desks and work areas, personal lockers,

personalization of classrooms by teachers, parental volunteerism, neighborhood residents respect school grounds, etc.

7. **Places for Social Interaction (Social Places)** refers to the degree to which occupants feel that places within the school building provide opportunities for meaningful social exchange and interaction. Specific issues related to social places might include classrooms that do not provide opportunities for small group instruction, places in the school that promote informal social exchange such as a lobbies, hallways, restrooms, and playgrounds, etc.

8. **Privacy** refers to the degree to which occupants feel that there are places within the school building which provide opportunities for an individual or a small group to be free from the intrusion of others. Specific issues related to privacy might include the availability of places to have private conversation, to be alone for a short moment to collect your thoughts, and/or places for students to be alone for a few minutes.

9. **Sensory Stimulation** refers to the degree to which occupants feel the school building provides a stimulating environment for learning that is safe yet challenging. Specific issues related to sensory stimulation might include brightness and cheerfulness of classrooms, hallways, assembly spaces, inspiring and creative wall displays, visually exciting learning spaces, a variety of textural changes and colors, etc.

10. **Crowding/Spaciousness** refers to the degree to which occupants feel the school building cannot adequately accommodate the number of students and teaching staff occupying it. Specific issues related to crowding/spaciousness might include problems with overcrowding in classrooms, congested hallways, lobbies, administrative offices and other spaces in the school building.

Of these ten attributes of environmental quality[4], five are seen as being of highest priority across the five schools in this study:

> 1. **Physical Comfort & Health**
> 2. **Classroom Adaptability**
> 3. **Safety & Security**
> 4. **Building Functionality**
> 5. **Aesthetics & Appearance**

Note that this list represents an aggregate of all the five schools in the study. Not all schools in the study rank the environmental quality attributes the same, although there are clear patterns that have emerged represented by the top five list above. School #142 for instance ranks functional adaptability nearer to the top, while School #138 is more concerned with safety and security. If other schools were to be investigated, other rankings may emerge depending on the particular context and circumstances the school finds itself in.

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[4] See Appendix A: Attributes of Environmental Quality for a full description of all ten environmental issues identified in the study).

1. Physical Comfort & Health

Physical Comfort and Health is the most often discussed environmental quality of concern in the study. According to most teachers, physical comfort and health concerns are experienced either daily (32%), weekly (37%), or monthly (22%). The following is a list of physical comfort and health issues that were identified by working groups.[5]

- poor air flow and ventilation are seen as potentially contributing to many health-related problems in the school (25, 31, 138, 142)

- noise and distraction problems are seen as either a low or moderate priority in open instructional areas (25, 31, 138, 142)

- cold zones in air-conditioned buildings are of constant concern (31, 138, 142)

- poor bathroom ventilation, due primarily from ineffectively operating ceiling fans, is causing some minor odor concerns (138, 142)

- old carpeting, especially at lower grade levels where students sit on the floor, is seen as a health concern (31, 32)

- excessive heat in the months from May through September is a concern for the one school without central air-conditioning (32)

- acoustic problems in bathrooms and corridors may be due to an over abundance of hard surface materials and the absence of sound absorbing materials such as acoustical ceiling tile and carpeting (32)

- concern over the scope of custodial responsibilities with respect to cleaning classroom counters (32)

- plumbing and drainage system has on a few occasions failed to prevent first floor flooding causing a potential health risk (142)

Although most teachers surveyed feel they have **little to no control (65%)** over the physical comfort and health concerns at their school, and despite the feeling that physical comfort and health concerns have been **somewhat hindering (44%)** in providing an effective environment for teaching and learning, teachers feel that the manner in which physical comfort and health concerns have been dealt with at their schools has been **somewhat fair (45%)**.

Overall, only **26%** of teachers indicated they were **somewhat to very disappointed** with respect to how physical comfort and health concerns have been addressed.

A majority of teachers feel that physical comfort and health is **very important (65%)**, in supporting the goal of maintaining a safe, healthy and nurturing learning climate, and **very important (56%)** in supporting the goal of increasing Student Academic Performance.

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[5]Each issue is ranked by the designated school number mentioning that issue. Schools identifying a particular issue are noted in parentheses.

2. Classroom Adaptability

Half of teachers responding to the survey indicated they are having problems with issues of classroom adaptability. Teachers experience problems on either a daily (14%), weekly (25%), or monthly (11%) basis.[6]

The following is a list of classroom adaptability issues identified. Each issue is ranked by the number of schools mentioning that issue.

- concerns over the effectiveness and adaptability of open plan versus self-contained classrooms (25, 142)

- computer installation and other problems limit classroom adaptability (32, 142)

- the need for additional storage space options (25)

- size and number of classroom tables seen as limiting options for self-contained classroom layout (32)

- inability to hang displays from concrete block walls limits available wall space (32)

- the need for additional electrical outlets in classrooms (31)

- difficulty conducting inter-class projects (32)

- problems with cooperative learning instruction in self-contained classrooms (32)

An equal percentage of teachers feel they have little control over the classroom adaptability at their school as do those who feel they have significant control. However, only **38%** of teachers feel that the manner in which classroom adaptability concerns have been dealt with at their schools has been **fair or somewhat fair**, as well as **somewhat to very helpful (30%)** in providing an effective environment for teaching and learning.

Overall, **50%** of teachers are **somewhat to very pleased** with how classroom adaptability concerns have been addressed at their school.

A slight majority of teachers feel that classroom adaptability is either **very important (52%)**,or **somewhat important (34%)** in supporting the goal of maintaining a safe, healthy and nurturing learning climate, and either **very important (55%)**, or **somewhat important (31%)** in supporting the goal of increasing Student Academic Performance.

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[6]See Appendix A for a detailed summary of all survey results referred to in this section.

3. Safety & Security

Of all the ten attributes of environmental quality, Safety and Security was the most often mentioned high priority concern for all five schools. Most teachers indicated they experienced safety and security problems on a regular basis. No respondent claimed to never having experienced a safety and security concern. According to teachers, safety and security issues occur most often on a weekly (33%) or monthly (41%) basis.

The following are a list of safety and security issues identified.

- concerns over neighborhood quality seen as compromising school safety and security (25, 31, 32, 138, 142)

- unsafe playgrounds and playground equipment contribute to safety problems (25, 31, 32, 138, 142)

- concerns over intruders and securing multiple points of entry (31, 32, 138, 142)

- poor outdoor lighting near parking lots encourage safety and security problems (25, 31)

- psychological safety on the building grounds (25, 138)

- child safety with parking lot vehicular traffic (32, 142)

- locked and semi-transparent windows increase security, but compromise visibility and daylight (32, 142)

- lack of garbage pick-up around dumpsters contributes to safety problems for students who play in the area (32, 138)

- inadequate emergency lighting in stairwells a safety risk (31)

- deterioration and lack of maintenance of city alley behind school a safety concern (25, 32)

- poor upkeep of grounds seen as a potential safety concern (31, 138)

- congested main stair during arrivals and dismissal may compromise safety (138)

Despite the relatively high perceived frequency of safety and security issues, most teachers feel they have **some control (55%)** over their personal safety at their school. In addition, **69%** of teachers feel that the manner in which safety and security concerns have been addressed have been **fair to somewhat fair**, as well as **somewhat helpful (41%)** in providing a safe environment for teaching and learning. Overall, **50%** teachers are **somewhat to very pleased** with how safety and security concerns have been addressed at their school.

A majority of teachers surveyed feel that safety and security is very **important (72%)** in supporting the goal of maintaining a safe, healthy and nurturing learning climate, and **very important (64%)** in supporting the goal of increasing Student Academic Performance.

4. Building Functionality

Sixty-four percent of teachers experience problems with building functionality. Most teachers encounter building functionality issues daily (25%) and weekly (21%).

The following is a list of building functionality issues identified.

- concerns with compliance with ADA Accessibility laws (Americans With Disability Act) (25, 31, 32, 138)

- lack of both playground equipment and an adequate tot lot area are seen as limiting functional use of the building grounds (138)

- congestion in the main stair during morning arrivals and dismissals compromises efficient circulation and movement (138)

- an underutilized library/media center limits effective building functionality (142)

- problems with parents finding way to child's classroom may be a consequence of unclear functional layouts and signage (142)

- unorganized central storage room limits functionality (142)

- crowded administrative area not functional (142)

- inadequate lobby design creates some functional problems (142)

- mismatch between community school vision and facility layout (142)

- inadequate furnishing of the teachers' lounge (31)

- cafeteria/auditorium divider partition in disrepair (31)

- lack of assembly space severely limits for school-wide activities (142)

Most teachers feel they have **little or no control (69%)** over the building functionality at their school. In addition, **41%** of teachers responding to the survey feel that the manner in which building functionality concerns have been dealt with have been **fair to somewhat fair**, as well as **somewhat to very hindering (38%)** in providing an effective environment for teaching and learning. Overall, only **31%** of teachers are **somewhat to very pleased** with how building functionality concerns have been addressed.

A majority of teachers feel that building functionality is either **very important (52%)**, or **somewhat important (34%)** in supporting the goal of maintaining a safe, healthy and nurturing learning climate, and either **very important (55%)**, or **somewhat important (31%)** in supporting the goal of increasing Student Academic Performance.

5. Aesthetics & Appearance

Sixty-nine percent of teachers responding to the survey claim to experience concerns over aesthetics and appearance of their school. The frequency of experience is broad ranging from daily to weekly (30%) and monthly to yearly (38%).

The following is a list of classroom adaptability issues identified.

- the appearance of existing playgrounds is of concern (25, 31, 32, 138, 142)

- semi-transparent windows are seen as unsightly (25, 31, 32, 138, 142)

- concern over the upkeep of the school grounds (25, 31, 138)

- concerns over the poor appearance of the neighboring property and city alley (25, 32, 138)

- old carpeting is seen as hindering the appearance of the school (31)

Two issues that were brought up but not of concern were:

- the interior of the school is perceived as clean and orderly (25, 31, 32, 138)

- interest in landscape projects as a way to improve the appearance of the grounds considered (142) .

Seventy-three percent of teachers feel they have **some to significant control** over the aesthetics and appearance concerns at their school. Supporting this finding is that the same 73% of teachers feel that the manner in which aesthetics and appearance concerns have been dealt with have been **fair to somewhat fair**, as well as **very to somewhat helpful (62%)** in providing an effective environment for teaching and learning.

Overall, **77%** of teachers are **very to somewhat pleased** with how aesthetics and appearance concerns have been addressed.

A majority of teachers feel that aesthetics and appearance is either **very important (64%)**, or **somewhat important (32%)** in supporting the goal of maintaining a safe, healthy and nurturing learning climate, and either **very important (56%)**, or **somewhat important (30%)** in supporting the goal of increasing Student Academic Performance.

3. ENVIRONMENTAL QUALITY AND EDUCATIONAL OUTCOMES

For Ms. Harrington, the fact that her school does not have a centralized air-conditioning system is unfair to her students, especially during certain periods during the school year when tests are being conducted. As she explained, "When you don't have the comfort you need to maintain a healthy body you don't care about socializing, you don't care about history lessons and the revolutionary war, your worried about survival...that's one of the basic needs, the hierarchy of needs."

What Is Known

Educators in the study consistently argued that poor environmental qualities, such as physical comfort and health, influenced the process of learning and teaching and ultimately educational outcomes such as achievement test scores and levels of attendance.

There is growing empirical evidence that the physical setting affects student and teacher behavior and attitudes and that these affects may have an influence on student performance and other educational outcomes.[7]

Physical variables that have been investigated have included acoustics and noise, lighting, interior color, seating position, classroom furnishing layouts and design, windowlessness, spatial density, crowding and stress. The most significant research evidence supporting the direct influential role of the physical variables on student performance concerns class size and school size; the greatest negative relationship between school size and student performance being most prevalent in urban schools. In addition, there is growing evidence that building age and condition, and thermal factors affect student achievement as well.

The following is a list of what is known from the literature about the influence of environmental qualities and educational processes and outcomes.

- Class sizes dictate the frequency and type of student-teacher interaction. As the size decreases interaction increases, classroom management improves, teacher stress decreases and teachers are more likely to try innovative techniques.

- School size, if smaller, offers greater opportunities for participation in community and other social organizations. A smaller school size also increases opportunities to exercise leadership roles, the number of courses offered, and student satisfaction. A lower incidence of crime levels and less serious student misconduct than larger schools will be encouraged, as well as a sense of responsibility and meaningful participation, particularly among students who have academic difficulty and come from lower socio-economic backgrounds.

- Acoustics and short-term noise have been found to be linked to classroom distraction, student and teacher morale and preferences.

- Increased spatial density and crowding influences various behavioral problems and satisfaction, aggressive behavior, movement and distraction on complex tasks.

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[7] Full bibliographic references available upon request.

- <u>Thermal comfort</u> has been shown to influence task performance, attention spans and levels of discomfort.

- <u>Seating position</u> affects teachers' evaluations of students. Students tend to sit in areas of the classroom in accordance with their goals and will select seats that provide opportunities for action and control of each other and the teacher. Students in front of classroom engage in more of their own work, are more attentive and likable by the teacher, have the highest rate of verbal interaction and participation.

- <u>Classroom furnishing layouts</u> designed to accommodate individualized instruction have been found to influence such student behaviors as movement patterns, purposefulness, disruptiveness and disorderliness, persistence and participation and attitudes toward class and other students.

- <u>Private places</u> in classrooms provide opportunities for conversations and solitude.

- <u>Open space</u> classroom designs may offer more opportunities for privacy than traditional designs. Teachers' adjustments of their activities to reduce distractions correlate with the amount of non-structural walls in the classroom. However, open schools high visual exposure can cause distraction, although modifications of open plan settings that provide better defined activity pockets or privacy nooks help prevent some of distractions.

- <u>Open versus self-contained classroom</u> comparisons indicate, based on research, that open classrooms promote more peer interaction and cooperative behaviors. Also, teachers hold more positive attitudes about their jobs and their schools, students' attitudes and self-images are generally better, students are more likely to secure acoustical and visual privacy, teachers experience greater feelings of autonomy and satisfaction, and there is an increased interaction among teachers and an overall enjoyment in teaching regardless of persistent noise problems. Students as well, experience an increased sense of autonomy, and engage in a greater variety of interactions and activities. However, transitions to new activities in open plan classrooms take longer and student 'off-task' behavior was greater than in traditional-plan schools.

- <u>Windowless classrooms</u> have been found to influence student and teacher attitudes negatively, and no consistent pattern of student performance has been attributed to the absence of an outside window .

- <u>Vandalism</u> is most likely to occur in school building locations where students gather in groups to play and socialize.

In summary, there is mounting evidence that many characteristics of the physical environment of the school can affect learning by indirectly affecting psychological processes such as behavior, attitudes, motivation, and morale.

Although all of these factors have been recognized individually, what is not known is how these environmental factors *interact* in contributing to educational quality. Which environmental factors take precedence over others? Which environmental factors do educators feel are most critical in supporting their educational activities and goals?

Environmental Quality

Environmental quality recognizes the complex nature of the school setting. The relationships between the physical environment and educational activities are overlapping and integrated,

forming qualities that are experienced directly by occupants within the school setting. This study asks a more comprehensive question: what are the attributes of environmental quality, as perceived by teachers, that have an influence on the educational process?

In an effort to answer this question, working groups were asked to determine which prioritized environmental issues they felt influenced any of three educational outcomes: Student Academic Performance, Student Social Development and/or Teacher Instructional Performance. These three educational outcomes were defined as follows:

• *Student Academic Performance* referred not only to achievement test scores, but also to evidence of day-to-day academic performance on in-class work assignments, quizzes and other tasks.

• *Student Social Development* was intended to refer to various social behaviors such as evidence of cooperative and competitive behaviors, incidents of disruptive behaviors, as well as feelings of self-esteem.

• *Teacher Instructional Performance* was intended to refer to the ability of a teacher to focus effectively on the instructional needs of his/her students.

A selected number of attributes of environmental quality are perceived by working groups as most significantly influencing educational outcomes in their particular schools.[8]

Link between Environmental Quality Concerns and Educational Outcomes
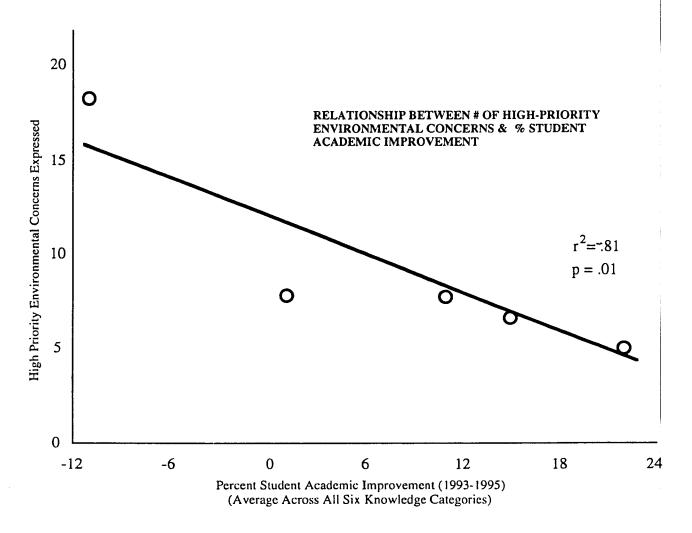
The study found that a decreasing number of high priority environmental quality concerns experienced by school occupants is significantly correlated with higher levels of student performance.

Specifically, when high priority issues expressed by the working groups in each school are correlated with an aggregated percentage of student academic improvement between 1993-1995[9], a significant relationship is observed ($r^2=.81$, $p=.01$). Although this study is exploratory, the sample of schools is small, and the correlation does not suggest a causal relationship, there does appear to be a general emerging pattern between environmental quality and educational outcomes.

To what degree the maintenance and improvement of environmental quality contributes overall to educational quality is unclear from this study. However, it is clear that environmental quality is perceived by the occupants of each school in the study as one of the critical indicators of educational quality along side the more familiar indicators as the school's social climate, student socio-economic background and the quality of the student's home and neighborhood environments.

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[8] Several environmental qualities, such as Crowding/Spaciousness and Sensory Stimulation, not mentioned in Finding #2, were also seen as having an affect on educational outcomes. See Appendix A: Attributes of Environmental Quality for a more detailed discussion of these attributes.

[9] As reported in the Maryland School Performance Program Report, 1995

RELATIONSHIP BETWEEN # OF HIGH-PRIORITY ENVIRONMENTAL CONCERNS & % STUDENT ACADEMIC IMPROVEMENT

$r^2 = .81$

$p = .01$

Percent Student Academic Improvement (1993-1995)
(Average Across All Six Knowledge Categories)

In order to discover which specific environmental qualities might be linked to educational processes and outcomes, participants were asked to identify those environmental qualities that they perceived are having the greatest impact on various educational outcomes:

Student Academic Performance

Within the context of the five schools in the study, the environmental quality attributes most often mentioned as having an influence on Student Academic Performance include: Physical Comfort & Health and Classroom Adaptability. The environmental qualities of Safety & Security, Building Functionality, Personalization & Ownership and Privacy were also identified as having an influence on Student Academic Performance, but were not mentioned as often.[10]

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[10]Environmental qualities are listed in order of confidence of finding which is determined by the number of times a particular quality was mentioned by working groups across all schools in the study.

Physical Comfort and Health, in particular, concerns over thermal comfort, air flow, ventilation, and noise can have a significant affect on Student Academic Performance.

- Poor air flow circulation and ventilation were the main causes of concern for all schools. Even when the few operable second floor windows are opened, very little fresh air can be effectively circulated. These conditions may be contributing to air borne bacteria causing many health-related problems which may in turn have the potential of influencing student attitudes, mood, and ultimately performance through lost instructional time. (25, 31, 32, 138, 142)[11]

- Thermal comfort can be of real concern especially during periods when tests are being conducted. Students are often unable to concentrate as easily on tasks. (25, 31, 32, 138, 142)

- Problems with noise in open space instructional areas is identified by the working group as a moderate priority that could have some influence on Student Academic Performance by continually distracting students from their work.(25, 138, 142)

- Concerns for lack of ventilation have kept one teacher from conducting science projects in his instructional area, hindering potential curricular choices that could impact Student Academic Performance.(142)

Classroom Adaptability, in particular, concerns over both open plan and self-contained classrooms and technological adaptability, can have a significant affect on Student Academic Performance.

- Open plan instructional areas are seen as having an affect on Student Academic Performance. The open plan arrangement, the working groups argued, causes problems with noise and distractions from other classes that tend to break students' concentration. (25, 31, 138, 142).

- One working group feels that the availability of electrical outlets and lack of wire cable runs for future computer installation may influence classroom adaptability thereby potentially affecting Student Academic Performance. (31)

- The requirement to use tables for cooperative learning takes up more room than the chairs once did. The inefficient layout and installation of new classroom computers in a few rooms take up even more space. The tightness of space and of working groups does not provide students, at times, with enough of a work surface to do their work creating distractions and affecting the quality of their work. (32)

Safety and Security concerns, in particular, concerns over poor neighborhood quality, feelings of safety on building grounds, and safety from intruders, can significantly affect Student Academic Performance.

- Safety and security as represented by the issues of poor neighborhood quality and psychological safety on school building grounds, is seen by teachers to potentially affect

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[11]Each issue is ranked by the number of schools mentioning that issue. Schools identifying a particular issue are noted in parentheses.

Student Academic Performance as illustrated by their students' preoccupation with problems at home which take time away from focused school work. (25, 31, 32, 138, 142)

- Teachers in the working group are well aware of the implications of safety and security problems on the ability of students to focus on learning. Due to recent incidents the custodian has established a new policy to lock the main entrance doors very soon after classes start and again directly after dismissal. The students' awareness of these incidents further contributes to an inability to focus on the their work. (31)

Building Functionality concerns, in particular, concerns over handicapped accessibility and mismatches between building layout and educational programs, can influence Student Academic Performance.
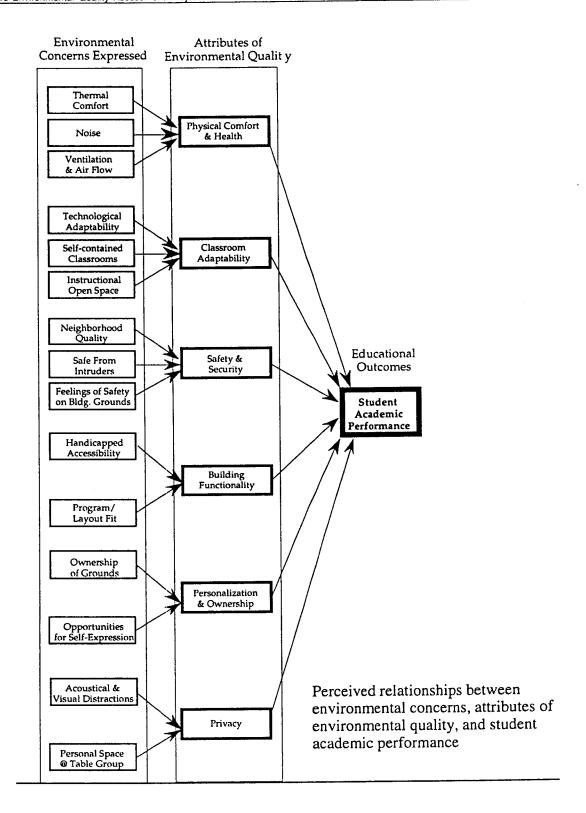
- Concerning the issue of ADA Accessibility, several of the working groups reasoned that although they did not have an physically disabled students, if they were to have one, accessibility issues might affect that student's ability to use the entire facility, thus affecting that student's performance. (25, 31, 32, 138, 142)

- Currently, mismatches between building functionality and organizational activities in one school are perceived by teachers to be affecting Student Academic Performance. Instructional space has been occupied by various outside agencies limiting the size and thus the functional effectiveness of many open space instructional areas.(142)

Personalization and Ownership concerns, in particular, encouraging ownership of school grounds, as well as providing opportunities for self-expression within the school, can have an affect on Student Academic Performance.

- The lack of ownership of the school grounds is seen as potentially affecting student attitudes and behavior that may hinder their performance. Evidence of this lack of ownership on the part of the community confronts students and teachers alike everyday: garbage, broken bottles, graffiti and other paraphernalia are strewn across the school site. (25, 31, 32, 138, 142)

- Within the school however, teachers and students are capable of personalizing their space and have gained a strong sense of ownership. Students learn the importance of taking responsibility for their actions. These attitudes, according to working groups, eventually influence their academic performance as well. (25, 31, 32, 138, 142)

- Teachers have developed several strategies to help students gain a sense of ownership and control over the limited space they do have. Most students have individual lockers (some students have to share with others) that are all individually personalized with the student's name and some artwork they have completed in a recent assignment. However, in some instances, due to the use of tables for cooperative learning strategies, students do not have desks to store their materials, and as a result, many student's personal belongings may be stacked on top of the working group tables, limiting effective workspace. Several teachers have developed a system of shoe boxes for students to keep their materials and supplies in. The school has thus far been unable to procure adequate under table drawers for these tables so as to provide some additional working surface on the tables. (32)

Privacy concerns, in particular, concerns over acoustic and visual privacy in open space instructional areas and personal space at table groupings, can have a significant affect on **Student Academic Performance.**

- Open space instructional areas are seen by the working group as providing little privacy for students which has the potential to affect Student Academic Performance. The performance of some students who work well in small groups or in privacy that are unable to do so because of the physical layout of the school, may suffer. Some classroom areas within the school provide places such as corners or activity areas, others do not. Several teachers indicated that students are allowed to go to any place within the classroom, but often only a few choose this option. (25, 138, 142)

- When students don't always get the personal space they need, the situation often results in fights. One teacher stated: "We average several fights a week." In a situation such as this, students can become territorial about their workspace and this can become another major obstacle to securing their sense of privacy and personal space. Self-contained classrooms limit the ability of teachers to provide semi-private work areas for students in need of a such as place. Crowded classroom tables in these classrooms add to this perception. (32)

Environmental
Concerns Expressed

Attributes of
Environmental Qualit y

Thermal
Comfort

Noise

Ventilation
& Air Flow

Physical Comfort
& Health

Technological
Adaptability

Self-contained
Classrooms

Instructional
Open Space

Classroom
Adaptability

Neighborhood
Quality

Safe From
Intruders

Feelings of Safety
on Bldg. Grounds

Safety &
Security

Handicapped
Accessibility

Program/
Layout Fit

Building
Functionality

Ownership
of Grounds

Opportunities
for Self-Expression

Personalization
& Ownership

Acoustical &
Visual Distractions

Personal Space
@ Table Group

Privacy

Educational
Outcomes

Student
Academic
Performance

Perceived relationships between
environmental concerns, attributes of
environmental quality, and student
academic performance

Student Social Development

Within the context of the five schools in the study, the environmental quality attributes most often mentioned as having an influence on Student Social Development include: Physical Comfort & Health, Safety & Security, Personalization & Ownership. The environmental qualities of Aesthetics & Appearance, Classroom Adaptability, Building Functionality, and Places for Social Interaction were also identified as having an influence on Student Social Development, but were not mentioned as often.[12]

Physical Comfort and Health concerns, in particular, thermal comfort, air flow, ventilation and noise can have a significant affect on Student Social Development.

- Teachers indicated that when students do not have the thermal comfort they need they become less interested in socializing and more interested in just surviving the heat or the cold. Some students withdrawal, while others become disruptive. (25, 31, 32, 138, 142)

- Poor air flow circulation and ventilation were the main causes of concern for all schools as well. Even when the few operable second floor windows are opened, very little fresh air can be effectively circulated. These conditions may be contributing to air borne bacteria causing many health-related problems which may in turn have the potential of influencing student attitudes and behavior and ultimately opportunities for positive social development. (25, 31, 32, 138, 142)

- Problems with noise in open space instructional areas is identified by the working group as moderate priority that could have some influence on the social development of students by continually distracting students from interaction with their immediate group. (25, 138, 142)

Safety and Security concerns, in particular, poor neighborhood quality, lack of safe places to play, feelings of safety, and safety from intruders, can significantly affect Student Social Development.

- Student Social Development was perceived by teachers to be affected by poor neighborhood quality as illustrated by in-school fighting, the result of social behavior learned at home or in the community subsequently brought into the school.(25, 31, 32, 138, 142)

- Safety on the playground is interpreted by the working group to hinder possibilities for Student Social Development, in that the deteriorating conditions of the playground and equipment do not as easily support teachers' attempts at organizing constructive play, thereby creating more reluctance on the part of the teacher to have students play on the grounds. Playground safety has also been seen as a high-priority problem. As is a problem at many Baltimore City schools, the playground has not been updated since the school's original construction. Outdated metal pipe."jungle gym" playground equipment has slowly degraded to the point of being extremely unsafe. (25, 31, 32, 138, 142)

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[12]Environmental qualities are listed in order of confidence of finding which is determined by the number of times a particular quality was mentioned by working groups across all schools in the study.

- The presence of vehicular traffic is seen as potentially inhibiting social development of students through the limited opportunities for safe places to play. (31, 142)

- Teachers in the working group are well aware of the implications of intruders on the social development of their students. Students are aware of the defensive stance the school must take with regard to visitors and intruders. Due to recent incidents the custodian has established a new policy to lock the main entrance doors very soon after classes start and again directly after dismissal. (31)

Personalization and Ownership concerns, in particular, encouraging ownership of school grounds, as well as providing opportunities self-expression within the school, can have a significant affect on Student Social Development.

- The lack of neighborhood quality illustrated by lack of ownership of the school grounds is seen as potentially affecting student attitudes and behavior that may hinder social development. (25, 31, 32, 138, 142)

- Within the school however, teachers and students are capable of personalizing their space and have gained a strong sense of ownership in their school. Students learn the importance of taking responsibility by sharing in classroom clean-up routines, helping with the hanging of wall displays, being involved in landscaping projects and other similar group activities outside of more formal instruction. (25, 31, 32, 138, 142)

- Students have few ways to personalize their area, as they may have been able to do when they had their own desk. The teachers try to compensate by placing students' work on the walls of the classroom and in the hallways of the school thereby instilling a sense of personalization and ownership on a larger scale (i.e., 'this is my classroom, this is my school'). (25, 31, 32, 138, 142)

- Where personalization and ownership qualities are clearly in view is at the main entrance lobby of each school. It is here where the life of the school is visually expressed with an abundance of slogans on the walls, posters announcing events, and flyers littered on waiting tables. (25, 31, 32, 138, 142)

- Teachers often personalize their instructional areas even though at first glance each area appears to have common features similar to others in the pod. Within guidelines established by teachers, there is evidence students have opportunities to personalize as well as take ownership in their instructional area. (25, 138)

- Within the school, teachers provide many opportunities for students to personalize their classrooms by displaying student work, and to take ownership of their school through participation in the Safeties, Plant Brigade, and other school service-related tasks.(31)

Aesthetics and Appearance concerns, in particular, a school's cleanliness, orderliness and character, can have an affect on Student Social Development.

- The appearance of the school, it's cleanliness, orderliness and character are believed by some teachers to influence Student Social Development. The school building was perceived as influencing occupant and visitors' first impressions of the school. To teachers, a clean school equals an orderly school. Clean and shiny floors, fluorescent light strips that brightly shine without flickering, displays that are orderly and colorful, these are the symbols of a school that is on a progressive track toward excellence. The

quality of aesthetics and appearance is perceived as instilling cultural awareness and pride in students as well as visitors to the school. Maintaining a positive appearance of the building reinforces personalization and ownership for not only its occupants, but for the community as well. (25, 31, 32, 138, 142)

• The poor appearance of the building grounds and lack of visually attractive playground equipment in all schools in the study are seen by some working groups as having an influence on students' social development.(25, 31, 32, 138, 142)

Classroom Adaptability, in particular, concerns over open plan and self-contained classrooms can have a significant affect on Student Social Development.

• Open plan instructional areas are seen as having an affect on Student Social Development. Managing class activities in an open space in a manner sensitive to other classes, limits the range of behavior and activities that can take place, such as music, dance, and other activities requiring movement of tables and chairs in the classroom. (25, 31, 138, 142).

• The requirement to use tables for cooperative learning take up more room than the chairs once did. The inefficient layout and installation of new classroom computers in a few rooms that take up even more space. The tightness of space and of working groups does not provide students at times with enough of a work surface to do their work creating distractions and affecting the effectiveness of their work. (32)

Building Functionality concerns, in particular, handicapped accessibility, lack of adequately equipped outdoor playareas, and space for school-wide assemblies, can have a significant affect on the social development students.

• Concerning the issue of ADA Accessibility, several the working groups reasoned that although they did not have an physically disabled students, if they were to have one, accessibility issues might affect that student's ability to use the entire facility. Due to limited access to the school building, a physically disabled student would not able to participate in all the activities of the school, thereby limiting his or her social development. (25, 31, 32, 138).

• The playground is interpreted by the working group as inadequately functioning to support teachers' efforts to organize constructive outdoor play, limiting opportunities for Student Social Development. (142)

• Currently, mismatches between building functionality and organizational activities in one school are perceived by teachers to be affecting social development. (142)

• The lack of space for school-wide assemblies limits opportunities for quality social interchange between a larger group of students, teachers and the community. (142)

Places for Social Interaction, in particular, concerns over adequate management of playgrounds and cafeterias and providing opportunities for informal social interaction in main lobby spaces, can have an influence on Student Social Development.

• The playground and the cafeteria are the two locations that students are free to express themselves and let off some energy. Even with teacher concerns over the lack of

opportunities for constructive play, students find imaginative ways to make the playground their own. (25, 31, 32, 138, 142)

• The most openly social place in all of the schools in the study is the main lobby and main office waiting area. It is this area that provides the liveliness, and rich informal social interaction throughout the day. This combination of areas serves to support social development of students. (25, 31, 32, 138, 142)

• The centralized location of the Commons serves as a true community forum. The Commons was observed as serving as a cafeteria, student meeting area, staff meeting space, community commons and informal social encounter space that clearly supports social development. (25)

• Even though the underutilized library/media center is not programmed for any particular purpose, it has become an informal place for students from various classes to informally gather and socialize, and serves as a small group instructional area as well. One teacher has allowed her students to spill over into the unused space if they need more privacy for doing their work. (142)

• Shared lockers are seen as a place encouraging social development even though sharing may produce feelings of lack of privacy, and lack of personalization and ownership on the part of students. (142)

Environmental Concerns Expressed

- Thermal Comfort
- Noise
- Ventilation & Air Flow
- Neighborhood Quality
- Safe From Intruders
- Safe Places to Play
- Feelings of Safety on Bldg. Grounds
- Ownership of Grounds
- Opportunities for Self-Expression
- Cleanliness, Order, & Character
- Instructional Open Space
- Self-contained Classrooms
- Handicapped Accessibility
- Outdoor Playareas
- School-wide Assemblies
- Program/ Layout Fit
- Management of Playgrounds
- Main Lobby
- Management of Cafeteria

Attributes of EnvironmentalQuality

- Physical Comfort & Health
- Safety & Security
- Personalization & Ownership
- Aesthetics & Appearance
- Classroom Adaptability
- Building Functionality
- Places for Social Interaction

Educational Outcomes

- Student Social Development

Perceived relationships between environmental concerns, attributes of environmental quality, and student social development

Teacher Instructional Performance

Within the context of the five schools in the study, the environmental quality attributes most often mentioned as having an influence on Teacher Instructional Performance include: Physical Comfort & Health and Classroom Adaptability. The environmental qualities of Safety & Security, Building Functionality were also identified as having an influence on Teacher Instructional Performance, but were not mentioned as often.[13]

Physical Comfort and Health concerns, in particular, thermal comfort, air flow and noise, can have a significant influence on Teacher Instructional Performance.

- At times, the lack of thermal comfort can affect a teacher's attitude, mood and motivation to instruct, thereby affecting their performance. (25, 31, 32, 138, 142)

- Poor air flow circulation and ventilation were the main causes of concern for all schools. Even when the few operable second floor windows are opened, very little fresh air can be effectively circulated. These conditions may be contributing to air borne bacteria causing many health-related problems which may in turn have the potential of influencing Teacher Instructional Performance lost instructional time. (25, 31, 32, 138, 142)

- Problems with noise in open space instructional areas are identified by the working group as moderate priority that could have some influence on Teacher Instructional Performance. Constant distractions from neighboring classes can affected teacher mood and attitudes thereby affecting instructional performance. (25, 142)

Classroom Adaptability concerns, in particular, the design and adaptability of both open plan and self-contained classrooms, and technological adaptability, and available display and storage space, can have a significant affect on Teacher Instructional Performance.

- Open plan instructional areas were seen as having an affect on Teacher Instructional Performance. In much the same way as with students, teachers are constantly distracted from noises and movement from other classes around them. These distractions can decrease, to some degree the effectiveness of their instruction. In addition, open instructional areas do not have enough wall space or chalkboard space. Some teachers compensate for the lack of wall space by hang posters from the ceiling, or placing displays over semi-transparent windows. (25, 31, 138, 142).

- Instituting a cooperative learning philosophy into the existing self-contained classrooms was seen as a welcome albeit challenging change for teachers with respect to classroom adaptability. A few teachers see these changes limit classroom flexibility impacting their instructional performance . All desks were replaced by classroom tables causing problems with the flexibility of classroom space: desks were seen by some teachers as providing more flexibility than bigger tables which took up the majority of classroom space. The classroom table issue impacted the ability of teachers in some cases to effectively conduct cooperative learning exercises that at times required free movement which is obviously difficult to do in a room occupied by tables. (32)

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[13]Environmental qualities are listed in order of confidence of finding which is determined by the number of times a particular quality was mentioned by working groups across all schools in the study.

• There was some concern over the installation of the computers that resulted in a limited use of valuable bulletin board space in several classrooms. It appeared to the working group that the computers could be organized in such as way to-limit the amount of direct wall space they occupied by grouping them back to back. This issue was seen as potentially affecting instructional performance. (32)

• Teachers mentioned wall hanging problems in warm weather as being one problem that often affected their instructional performance by forcing them to take time out of their planning to re-hang visuals, posters and student artwork. (32)

• Although teachers feel they have adequate storage, it is just not properly organized or managed as well as it could be. As a result, it is hard to conduct an inventory of books and supplies and there is no room for additional storage needs. Books and supplies stored in open instructional areas are routinely stolen or misplaced. (142)
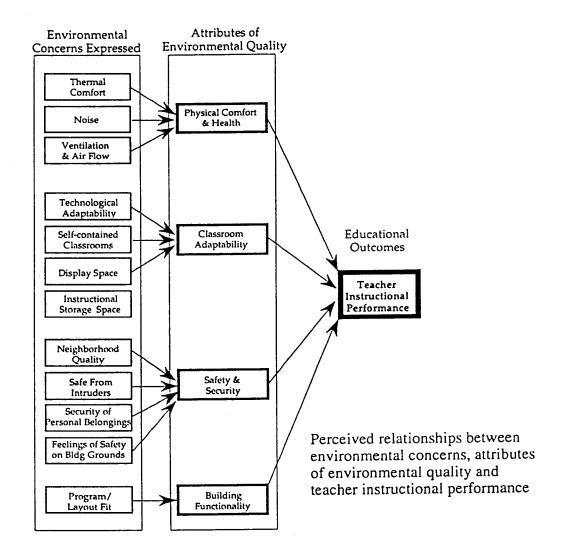
Safety and Security concerns, in particular, concerns over poor neighborhood quality, feelings of safety, safety from intruders, and the securing of personal belongings, can have a significant affect on **Teacher Instructional Performance**.

• Due to poor neighborhood quality, an ever-present undercurrent of anxiety is created in the minds of many teachers. Perceived psychological safety on building grounds can have an affect on teachers' attitudes and moods. Bad experiences teachers bring into the school can adversely affect their ability to focus on the task of teaching.(25, 31, 32, 138, 142)

• The physical state of the school and its grounds can also have an affect on Teacher Instructional Performance. Locked and frosted windows constantly remind teachers of the surroundings. Stories of past intruders remind teachers of the lack of control they have at times even within the building. Although teachers feel psychologically safe within the building and often claim to be habituated to the situation, an ever present concern for their safety and the safety of their students pervades their day and is every so often heightened by new events that may impact them directly. These feelings, they argue, indirectly affect their performance by distracting them from their immediate task of teaching. (25, 31, 32, 138, 142)

• Although recent steps have been taken by the school to cut down on intruders, teachers in the working group are very aware of the intruder safety problem on their ability to focus on the instructional need of their students.(31, 138)

• Security concerns over teachers' locked storage is believed to serve as a distracter on a teacher's ability to focus on instruction. Teachers should not have to worry about whether his or her personal belongings are secure or not. (31, 32, 138, 142)

Building Functionality concerns, in particular, concerns over mismatches between building layout and educational programs, can affect **Teacher Instructional Performance**.

• Currently, mismatches between building functionality and organizational activities in one school are perceived by teachers to be affecting their own performance. Due to the influx of outside community agencies in the school, created as a result of a community school vision, open-plan instructional space has been compromised decreasing the availability of space for instruction. (142)

• Teachers feel their performance suffers when supportive instructional spaces have not been managed well: they must cope with an abandoned library/media center, unorganized centralized storage rooms, a crowded administration area, and directing lost parents who cannot find their student's classroom.(142)

Perceived relationships between environmental concerns, attributes of environmental quality and teacher instructional performance

4. FACILITY MANAGEMENT, ENVIRONMENTAL QUALITY AND THE EDUCATIONAL PROCESS

Mr. Spearing, wanting to proactively address teacher needs and concerns, developed a "customer response form" placing copies of the form in each teacher's mailbox to encourage their feedback on problems that they might have related to the physical environment of their school. Soon he was addressing problems of needing heat, supplying bathrooms, setting clocks, fixing running sinks, coaxing Ms. Johnson's uncooperative audio-visual screen, repairing a damaged outlet in Ms. Bennick's room, adjusting legs on a classroom table, replacing duct tape used to conceal computer network wires running along the floor of the computer room that children keep tripping over, air ventilation, fixing a stuck door outside the boys bathroom, replacing flickering fluorescent lights in Ms. Henderson's classroom, reserving the VCR for a Mr. Jennings, installing a pencil sharpener in Ms. Leadbetters classroom, repairing a broken top drawer of Ms. Hopper's desk and fixing a damaged puzzle rack in Ms. Anger's room, replacing the intercom speaker switch, and repairing a rug at the entrance of Ms. Blackmore's room. One teacher who used Mr. Spearing's customer response form exclaimed, "I am happy to have you as my personal custodian."

Many other examples could be provided from all five schools in this study. Mr. Spearing's contribution to building and maintaining the educational "stage" speaks for itself.

The contribution of custodians in providing a stage set for education is often overlooked and underrated. Most educators implicitly assume that the custodian and maintenance staff play an important but somewhat minor role in the goals of education.

However, from this study a different picture emerges. Although perceived as playing a supportive role in education, facility management is seen paradoxically as having significant control, even responsibility over the very environmental qualities that educators in these schools see as influencing educational outcomes.

The Organization for Economic Co-operation and Development[14] cogently describes what it believes to be the role of facility development in improving the quality of the educational process:

Another development which has its foundations in the widespread movement towards decentralization of educational administration concerns the way in which resources, once provided are used and managed. This is an aspect of the role of school leaders which is often neglected but where they can make a significant contribution to the life of the institution . . . in so far as they lead to greater job satisfaction and better running of the establishment they can be welcomed as contributing to the quality of schooling.

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[14]OECD (1989). <u>Schools and quality: An international report</u>. Paris, France: Organization for Economic Cooperation and Development, p. 122.

Facility Management and Environmental Quality

An across case analysis reveals that facility management services are perceived by school occupants as having a critical role in both maintaining and improving several of the environmental qualities identified by working groups in the study.

According to the working groups, facility management is seen as having significant influence over four environmental qualities:

> **Physical Comfort & Health**
> **Safety & Security**
> **Aesthetics & Appearance**
> **Personalization & Ownership**

These four out of the total of ten environmental qualities are seen as being domains of facilities management, and concurrently domains that occupants experience less influence over.

Between cases, on the other hand, the influence JCI-managed schools differs from match schools in the study.

- **JCI-managed schools appear to have 24% less perceived environmental concerns adversely affecting educational outcomes than match schools.**

This suggests that JCI facility management is contributing to the educational process by creating a slightly more favorable physical environment than match schools.

Through these four environmental qualities, facility management is perceived by the working groups as having varying influence on Student Academic Performance, Student Social Development and Teacher Instructional Performance.

What follows are some examples of the impact of facility management upon these four environmental qualities.

Physical Comfort & Health

- Bernard takes very seriously his company's motto "to meet and exceed the expectations of the customer," and for him, that means making sure floors are shining, trash is emptied, rugs are vacuumed, chalktrays are cleaned, making best use of the most innovative products on the market, and engaging in intensive staff training aimed at continuous improvement. The principal, when asked to evaluate how well she feels the school is doing with respect to environmental quality states, "I think in terms of a clean environment, a sanitary facility, I think we're well above average...we're very good in that area." A teacher from the working group was also insistent about the custodial care explaining, "The floors sparkle...the custodians work very hard [and] meet my needs, they're wonderful. The school is attractive to students and people who come in [and] the staff has done everything they can do to keep it attractive." (32)

- The custodian is keenly aware of thermal comfort problems and tries to alleviate them for teachers however he can. When it gets warm, the custodian will unlock the windows to

get some relief to a localized part of the building. Even when the custodian opens a window, however, one teacher located further in the interior of the building remarks, "If there is a nice breeze coming through the window I can't feel it." (138)

• Good custodial responsiveness and general maintenance can go only so far. At some point, building systems that operate inefficiently must be addressed as well. The condition of the aging mechanical system along with the lack of adequate bathroom ventilation have continued to concern teachers: "We have a much better regulated system now, but it still gets cold in here," one teacher remarked summarizing the general feeling on the second floor. Cutting down air in the one pod only has the effect of eliminating air in another. (142)

• The custodial team leader echoes the concerns of teachers, "Cleanliness is the most important thing," he says. "At first, bathrooms smelled so bad, it was so distracting...there was trash in the hall due to no trash cans...it took six months for me to be in total control of what I wanted to do here." (142)

Safety & Security

• Due to several recent thefts by intruders, the custodian has established a new policy to lock the main entrance doors very soon after classes start and again directly after dismissal. (31)

• The custodial and maintenance staff has taken a number of steps to decrease the likelihood of unwanted intruders, as well as building and car break-ins and graffiti. Three security cameras were installed on the outside of the building by the maintenance staff in the past year. Safety in the parking lot from assault, auto vandalism as well as safety from intruders continues to be a high priority for this school. The head custodian makes rounds around the building at regular intervals throughout the day to make sure exit doors are indeed locked from the outside. (142)

• To Team Leader Ervin, environmental quality means safety and cleanliness. The school has had no safety accidents in the school since he has been there. He states, referring to his employer, "They train you to death, safety is central." In addition to his concern for safety within the school, Ervin cleans the grounds every morning and intermittently throughout the day. There was glass everywhere, but now that is under control. "Its the first thing visitors look at," he says. (142)

Aesthetics & Appearance

• Many of the on-going efforts of the principal, such as improving the condition of the building and grounds have been aided by the presence of their private facilities management company. Ms. Grafton states, "They have kept up the grounds much better now...these guys get out every morning and do it over and over...its a problem still but there seems to be some recognition from the community." She continues to explain that with the help of her custodial staff, the school was instrumental in cleaning up the city alley all the way to Milton Avenue. (25)

• The working group agreed with the principal that the interior of the building itself is clean, inviting, and well maintained. As one teacher remarked, "Looks well for the most part...the inside of the building? I would invite the President over!" (31)

• Bernard, the school's head custodian, acting on his own initiative, was for a time able to empty the Urban Services dumpster from the adjoining property by hauling off garbage to a nearby landfill. (32)

• Mr. Crawford, the head custodian, recognizing the poor state of the building grounds remarks, "We go out everyday to contain that...its very hard, very hard." One teacher defending the custodian, remarked, "I used to have a group of kids that would come out and clean up two or three days of the week, we'd go out in the morning just to help the custodians who couldn't do all of this. The principal Ms. Kavelaris adds, "I would like to see the outside environment be more attractive," but admits the problem may be due in part to the structure of their custodial contracts that required custodians. Nevertheless some teachers feel there are plenty of people to do this work now. As one teacher stated, "Our grounds should be kept better than they are." (138)

• Graffiti problems have been resolved by relentlessly attacking the problem through the use of a pressure chemical wash on the back of the building where most of the graffiti appears. "Its been a year since I've had to use the wash," the custodian says. (142)

Personalization and Ownership

- Referring to the upkeep of the grounds, Ms. Blake says it is a never-ending battle, but one the custodial staff feels is well worth the effort. She remarks, "They are in competition with crime," when it comes to keeping the school grounds safe and clean. According to the parent liaison, as a result of the efforts made by the custodial staff, some in the community have actually begun to take notice of the school's determination to maintain a positive appearance encouraging some in the neighborhood to police those individuals who keep defacing the property. (25)

- In addition to these environmental qualities, the custodian acts as a role model and mentor for the students. Ervin's official responsibilities are blurred by his involvement with the students: "I look out for them...I like to tell them my story whenever I can." In a way, "Mr. Ervin," as the students call him, serves as a makeshift authority figure for students. (142)

- The only problem Ervin has now is, 'kids throwing trash on the grounds,' but he is patient with them stating that "Sometimes they have no place to put trash so they put it on the ground." Instead, he tries to instill a sense of responsibility in the students to take pride in their school.(142)

Educators and Environmental Quality

Even with the myriad of problems and concerns that custodians deal with on a daily basis, many environmental problems remain that educators do not hold them responsible for. To add to this, educators are often not always aware of these problems they face or how to address them.

Two critical environmental qualities that are of concern with most working groups in the study are Classroom Adaptability and Building Functionality. Some examples of these problems follow:

- There were issues beyond noise and distraction and classroom layout that teachers appeared to be more concerned about: adapting their classrooms to future technologies.(31)

- Teachers feel that implementing the cooperative learning philosophy physically within their classroom with specific areas or corners for math, writing, art and science is difficult, if not impossible, even though they were given a short in-service instruction course on how to layout their classrooms to fit the philosophy.(32)

- One of the highest priority issues identified by teachers were problems with open space. Although most admitted that open space promotes collegiality among teachers, noise and distraction continue even with the recent purchase of new portable bulletin boards. A previous principal enforced a strict policy of openness and would not allow any partitions or dividers at all; they are all very appreciative of the efforts of the present principal to address their concerns over open space.(138)

- Probably the most complex problem that teachers are concerned with is the distraction caused by open instructional space. In addition to the typical problems of open space areas (visual and auditory distractions for teachers and students) these areas are inefficiently laid out and organized, obstructed by structural columns and do not provide nearly enough wall space, or enough floor area for activity centers. There seems to be no correspondence between the size, shape and configuration of the makeshift classrooms and the educational activities that are contained within them. (142)

Sixty-nine percent of teachers feel they have little or no control over the building functionality at their school.

In addition, only 41% of teachers responding to the survey feel that the manner in which building functionality concerns have been dealt with have been fair to somewhat fair, as well as somewhat to very hindering (38%) in providing an effective environment for teaching and learning. Overall, only 31% of teachers are somewhat to very pleased with how building functionality concerns have been addressed.

With respect to Classroom Adaptability, an environmental quality that teachers would be expected to be in control of, only 34% of teachers feel they have significant to complete control over the classroom adaptability at their school. In addition, only 38% of teachers feel that the manner in which classroom adaptability concerns have been dealt with at their schools has been fair or somewhat fair, and only 30% feel the degree of Classroom Adaptability has been somewhat to very helpful in providing an effective environment for teaching and learning.

Problems of Classroom Adaptability and Building Functionality are not seen by the schools studied as areas where facility management has any expertise. However, the findings indicate that teachers in these schools do not seem to have the expertise to address them either.

Facility Management, Educational Processes & Outcomes

Ms. Kavelaris remarks, that she deals with facility management issues "more than I want. I don't want to talk about panic bars, to me that's not exciting, but I know its in my purview. But, I'd like it to be dealt with and be gone so that our focus can be just on academics. So, I'm not happy when I have to make a case about something we expect to be working and its not working." She estimates that her attention to facility management issues may account for as much as 10 to 15% of her workload as principal.(138)

Clearly, there are many factors that influence educational outcomes, with environmental qualities being only one of those factors. Correspondingly, facility management services, through the maintenance and improvement of environmental quality, have a limited, yet significant role in influencing educational outcomes by ensuring an optimal environment for effective teaching and learning.

The four environmental qualities mentioned above, Physical Comfort & Health, Safety & Security, Aesthetics & Appearance, and Personalization & Ownership are, as indicated by Finding #2, perceived by the working groups as having an influence on various aspects of Student Academic Performance, social development and Teacher Instructional Performance. The diagrams on the following pages illustrate relationships between facility management, environmental concerns and associated environmental qualities and educational outcomes.

Student Academic Performance

Facility management was found to directly address three of the six environmental quality concerns most commonly associated with student performance across schools: -

- Physical Comfort & Health (thermal comfort, air flow and ventilation)

- Safety & Security (safety from intruders)

- Personalization & Ownership (ownership of building grounds)

Student Social Development
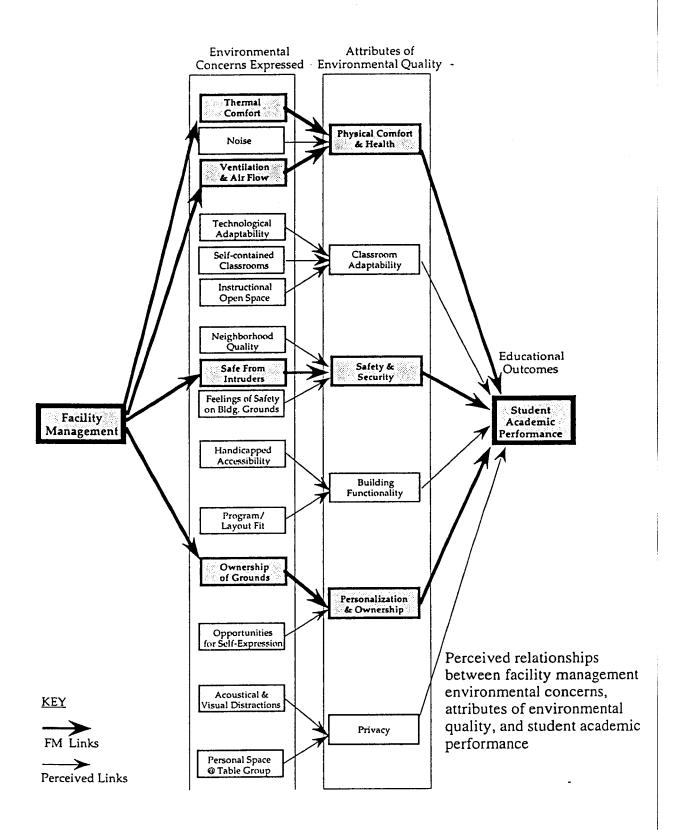
Facility management was found to directly address four of the seven environmental quality concerns most commonly associated with Student Social Development across schools:

- Physical Comfort & Health (thermal comfort, air flow and ventilation)
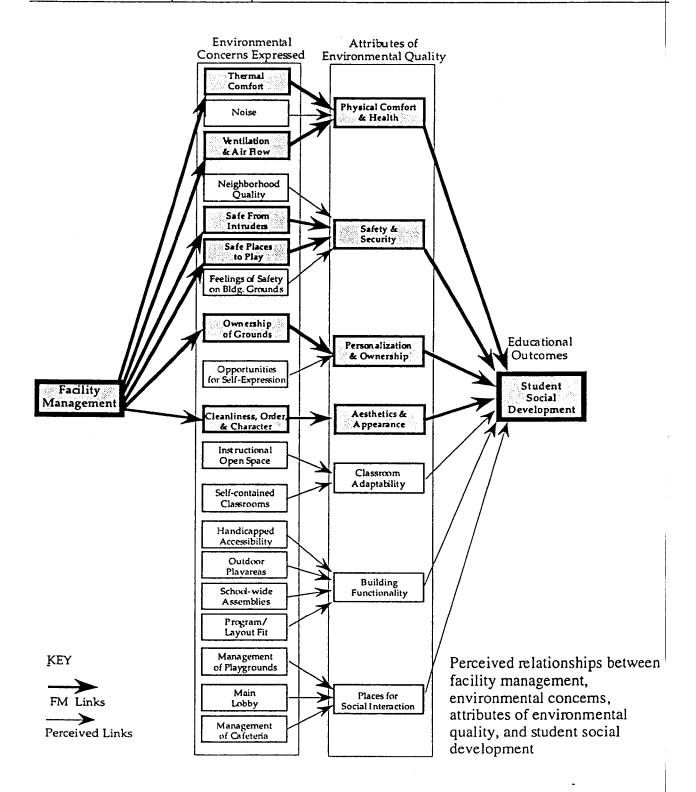
- Safety & Security (safe places to play, safety from intruders)

- Personalization & Ownership (ownership of school grounds)

- Aesthetics & Appearance (cleanliness, orderliness and character)

Teacher Instructional Performance

Facility management was found to directly address two of the four environmental quality concerns most commonly associated with Teacher Instructional Performance across schools:

- Physical Comfort & Health (thermal comfort, air flow and ventilation)

- Safety & Security (safety from intruders)

Perceived relationships between facility management environmental concerns, attributes of environmental quality, and student academic performance

Environmental
Concerns Expressed

Attributes of
Environmental Quality

Thermal
Comfort

Noise

Ventilation
& Air Flow

Physical Comfort
& Health

Neighborhood
Quality

Safe From
Intruders

Safe Places
to Play

Safety &
Security

Feelings of Safety
on Bldg. Grounds

Ownership
of Grounds

Opportunities
for Self-Expression

Personalization
& Ownership

Facility
Management

Cleanliness, Order,
& Character

Aesthetics &
Appearance

Instructional
Open Space

Self-contained
Classrooms

Classroom
Adaptability

Handicapped
Accessibility

Outdoor
Playareas

School-wide
Assemblies

Building
Functionality

Program/
Layout Fit

Management
of Playgrounds

Main
Lobby

Places for
Social Interaction

Management
of Cafeteria

Educational
Outcomes

Student
Social
Development

KEY

FM Links

Perceived Links

Perceived relationships between
facility management,
environmental concerns,
attributes of environmental
quality, and student social
development

Environmental
Concerns Expressed

Attributes of
Environmental Quality

Thermal Comfort

Noise

Ventilation & Air Flow

Physical Comfort & Health

Technological Adaptability

Self-contained Classrooms

Display Space

Instructional Storage Space

Classroom Adaptability

Facility Management

Neighborhood Quality

Safe From Intruders

Security of Personal Belongings

Feelings of Safety on Bldg Grounds

Safety & Security

Program/ Layout Fit

Building Functionality

Educational Outcomes

Teacher Instructional Performance

KEY

FM Links

Perceived Links

Perceived relationships between facility management, environmental concerns, attributes of environmental quality and teacher instructional performance

CONCLUSIONS

The Process of Participation

This study indicates that an on-going assessment process with occupants, with the intent of identifying and creatively addressing environmental quality concerns, issues and problems, can be helpful in continuously improving the physical conditions of learning and teaching.

Where issues about managing school facilities are concerned, building providers' interests tend to dominate, or are privileged, over those of school occupants. For example, however laudable, goals of energy efficiency over human comfort on the part of the district to save scarce resources, tends to serve the providers' interests more so than others. The results are facilities biased towards the providers' priorities in which student, teacher and community needs are relegated in importance, or in some cases, absent entirely.

The development of an on-going assessment process with occupants can transform this situation so that occupant knowledge and values gain a rightful place. Both occupants and providers depend upon each other. To manage better facilities, particularly for occupants, there is a need to develop more awareness of each other's knowledge and experience. The key to integrating occupant and provider knowledge is sharing knowledge through social negotiation. Both parties must acknowledge first their interdependence and need for better understanding. A participatory assessment process is one tool to accomplish this goal.

An on-going process of environmental quality assessment, such as the one followed in this study, has the potential for supplying the tools necessary for educators to successfully resolve many such environmental concerns in an as yet unknown, creative and innovative way (See Appendix C for a complete description of the environmental assessment process followed in this study).

Environmental Quality Issues

This study found that environmental quality is most often perceived by occupants in the five schools as the provision of physical comfort and health, classroom adaptability, safety and security, building functionality and aesthetics and appearance.[15]

Physical comfort and health issues across schools are thermal comfort, air ventilation, and in some cases noise. Despite the fact that most teachers in all schools felt that the custodial staff and the maintenance staff are perceived as doing all they could do to address problems of thermal comfort and air ventilation, these problems persist. One explanation is that in all of these buildings, the mechanical systems are fast approaching the limit of their life. In addition, the original design of the mechanical systems most likely did not take into account the problems occupants are facing today. These problems are not unique to schools, many other building types built at the same time, during the first attempts at designing energy conscious buildings, are now experiencing similar problems. In addition to the frustration these systems bring, fenestration systems fail as well to provide the natural daylight and fresh air that occupants desire. This problem too is a result of

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[15]See Appendix A for complete documentation of the all environmental qualities assessed in this study. Also see Appendix B for a complete listing of specific environmental concerns by school.

'sealing' the building to create more efficient, energy conserving buildings. Although these problems will be difficult to surmount financially, they urgently need to be addressed.

Classroom adaptability issues center around teachers' inabilities to control noise and distractions in open space instructional areas as well as an inability to accommodate cooperative learning activity centers in both open and self-contained classrooms. These problems are endemic in all open plan schools. Considering the central importance of the classroom as the primary place of educational instruction, there has been little systematic thought about how classrooms, open or self-contained, should be designed and arranged to accommodate cooperative learning instructional strategies.

Safety and security issues focus almost exclusively on problems of controlling unlawful entry into the school. There are more concerns over security issues than safety issues which school administrators feel are under their control. Security problems are perceived to be lessened by the installation of buzzer systems, however, the fears and concerns associated with the symbolism of security systems is not easily overcome. Security issues are connected ultimately with concerns over neighborhood safety and security which are clearly on the minds of students, teachers, parents and staff alike. The main safety issue concerns outdoor playground equipment and the state of the building grounds themselves. Play equipment is perceived as both unsafe and developmentally inappropriate. Again, addressing the problem of play equipment is stalled by budgetary limits but is an issue that needs to be addressed.

Building functionality issues are somewhat less of a concern than those mentioned above, but when functionality issues do arise they indicate problems with the match or fit between the ideals of the building layout and the realities of changing educational activities and practices. These problems are often systemic, as in the case of at least one school in the study. As some schools begin to move toward more community involvement, building functionality issues will continue to surface.

Aesthetics and appearance are more of an issue with respect to the building grounds than with school interiors. Many occupants of the schools are frustrated by the lack of control their custodial staff has over the upkeep of the building grounds. Much of the explanation for this problem focuses on a downsized staff, questions of responsibility, and problems with the community's lack of ownership of school grounds. On the other hand, occupants are very satisfied with the job the custodial staff performs within the building. The schools are perceived clean and orderly.

The remaining five environmental qualities identified in this study, personalization and ownership, places for social interaction, privacy, sensory stimulation and crowding/spaciousness are not perceived as being of primary concern for the schools in this study. However, some issues did emerge from the interviews and workshops.

Within the school, teachers feel that students have opportunities to express themselves and take ownership of their school. The importance of displaying student work inside and outside the classroom is a universal principal these schools advocate and practice. The real concern is that some in the community do not take ownership of the school grounds.

Although students are not perceived as having many opportunities for privacy, they do have some. Much of this problem stems from teachers not having classrooms that are adaptable enough to provide for private places within the classroom, although some teachers have found ways to provide for this need.

All teachers feel that their school provides ample sensory stimulation for students. They perceive their schools as being bright and cheerful as well as instructive. Displays of student work and other instructional materials on the surfaces of walls are tangible ways in which this perception is maintained.

Unexpectedly, only one school in the study was seen as being crowded. In most cases, due to lower enrollments, schools are spacious. Even with this fact, teachers do not feel as though they have any control over this environmental quality since it is determined more by district policy and school administrator decisions.

Educational Outcomes

This study found that high-priority environmental concerns are significantly correlated with percent student achievement improvement from 1993-1995. Schools with a high number of high priority environmental concerns tended to exhibit low percentages of student achievement improvement, while schools with a lower number of high priority environmental concerns tended to exhibit higher percentages of student achievement improvement. These findings are preliminary at best, but they do suggest a pattern that needs further research.

In addition to this finding, a number of specific environmental quality attributes are perceived by occupants to have an impact on several educational outcomes. Physical comfort and health was found to be the environmental quality with the most influence on educational outcomes. Physical comfort and health and classroom adaptability in particular have the greatest impact on Student Academic Performance as well as Teacher Instructional Performance. In addition, physical comfort and health, safety and security, and personalization and ownership are the environmental qualities that have the greatest impact on Student Social Development.

The fact that teachers think that physical comfort and health issues have in influence on educational outcomes is further evidence of the importance of addressing the concerns of this environmental quality. Physical comfort and health has the affect of influencing student behavior, attitudes and mood which can lead to less attention to their work. The same problems and effects of physical comfort and health can influence a student's social development under certain conditions: disruptive behavior is often the outcome of these influences.

Classroom adaptability, also high on the list of qualities impacting the educational process, is an environmental quality found to be of concern in this study. Most of the problems associated with open space are blamed on students' inability to focus on their work. Distractions from the movement and noise of other classes is the prime factor contributing to this low rating of classroom adaptability. In addition, teachers' performance suffers when he or she cannot use the classroom effectively to facilitate the learning process. This problem constitutes an additional impact on student performance.

Safety and security issues are seen as having the most impact on students' social development. Many of the problems associated with this outcome are focused on playground safety and low neighborhood quality: the outdoor play environments do not provide an opportunistic setting for rich and varied social interactions between children. The lack of ownership of their playground by the community also sends a negative message to children. In addition, children often bring many of their social problems into the school, affecting their ability to interact with their peers in structured learning settings.

Facility Management

This study found that facility management plays an important role in maintaining and improving environmental quality. Four out of the ten qualities identified were seen as being under the domain of facility management: physical comfort and health, safety and security, personalization and

ownership, and aesthetics and appearance. By maintaining these four environmental qualities, facility management is additionally seen as having a role as well in supporting educational activities, goals and outcomes.

JCI-managed schools faired better than match schools in the number of environmental concerns perceived by occupants to be facility management related. However, on the whole, all schools experienced problems that were perceived as under the influence of facility management, as well as under occupants' control.

The corollary of this finding is that educators feel they have, by implication, some measure of responsibility, influence and control over the six remaining environmental qualities. For instance, teachers feel that they can take some responsibility for addressing concerns over classroom adaptability, instill a sense of personalization and ownership within their students, take advantage of places that foster healthy social interaction, provide places for privacy for students within their classrooms, and maintain an appropriate level of sensory stimulation for their students.

Yet, paradoxically, some teachers lack adequate knowledge about how to effectively utilize, maintain and manage classroom space to support their instructional efforts, such as with cooperative learning strategies. Open instructional areas are perceived as being too distracting and noisy, while some self-contained classrooms are seen as too constraining.

In addition, although teachers do not have a strong sense of control over building functionality and crowding/spaciousness, they expect their school administrators to address these issues through educational policy.

Partnership between Facility Management & Education

It is difficult, if not impossible, to separate an activity from the environmental setting within which it occurs. The thermal, lighting and air quality comfort the facility provides, the cleanliness, orderliness and character a facility exudes, and the quality of spaces within the classroom, all can greatly affect what can and cannot be accomplished in a given facility.

Any school administrator is likely to have a vision of the ideal place for learning. The vision and the reality, however, often do not coincide. The challenge is to get the reality of the school congruent with the ideal vision of the place for learning.

It is the responsibility of the administrator to set standards for care and upkeep of facilities and resources. School facilities must be cleaned, protected, preventively maintained, operated, repaired, and environmentally regulated. It is at this level that many administrators begin their efforts to improve the quality of the learning environment.

However, there is growing pressure from educators that indicates administrators are not addressing any factors beyond the basic services mentioned. Educators insist that school facilities must be managed to support the educational program needs as well. Assessing the degree to which the school facility helps or hinders the educational activities contained within is a first step in the direction of attaining the vision.

From what has been learned in this study, the environmental qualities of classroom adaptability and building functionality are concerns neither educators nor facility management personnel have been able to appropriately address. Beyond the recognized reduction of classroom size to 25 to 30 students, beyond the standard and critical maintenance services of custodians, and beyond constant shuffling of desks and tables by classroom teachers, are more complex problems of facilities that simply do not effectively support the educational programs contained within them.

How can schools collectively address problems of managing open plan instructional areas with all the visual and acoustic distractions that accompany them? How can schools collectively address problems associated with effectively laying out both open space and self-contained classrooms for cooperative learning? How will schools interested increasing the range of community services in schools accommodate these services adequately without adversely affecting their traditional educational program activities?

These are questions that require a collaborative effort that integrates the knowledge of educators and school administrators, facility managers, and community organizations and agencies. How can this be accomplished?

First, educators need to become more aware of the potentials and opportunities that the physical setting presents to them -- they must become environmentally competent. This awareness will not come about through in-service programs alone. Rather, actively working to find more appropriate ways to structure their setting for teaching and learning, through an environmental assessment process, can be a positive step forward.

At the same time, facility managers need to become more cognizant of the role the physical environment plays in supporting the educational process. Problems of classroom adaptability and building functionality can be solved through a core competency of space planning: a competency well established in other building types such as office facility management. Either Departments of Facilities must take the lead in providing this type of service, or local schools through their School Improvement Teams must develop or obtain this competency if they are to solve some of the intractable problems classroom teachers have lived with since educational philosophies first began their rapid change a full 30 years ago.

Finally, many of the more difficult emerging building functionality problems faced by several schools in this study concern themselves with connections to community. Although community involvement is at a low ebb at present, there are indications within these schools, and within Baltimore City Public Schools in general, as well as across this country, that the community school concept and community-school partnerships are emerging once again as a partial solution to the problems of urban school districts. These demands will place a even greater pressure on school buildings to expand their services and open up their space to outside community organizations and agencies. Clearly the community should as a matter of course, be included in this on-going environmental assessment process.

In this way, by establishing a partnership between school facility manager, educators, and the community in the joint educational decision making process, new opportunities for improving the conditions of learning and teaching can begin to arise.

APPENDIX A: ATTRIBUTES OF ENVIRONMENTAL QUALITY

A comprehensive list all issues and concerns raised,
survey findings, and links to educational outcomes and goals
for each of ten attributes of environmental quality

1. Physical Comfort & Health

Physical Comfort and Health refers to the degree to which occupants feel the indoor environment meets their physiological needs with respect to thermal and air quality, illumination, noise and odors.

<u>Issues and Concerns Raised</u>

The Physical Comfort and Health is the most often discussed environmental quality of concern in the study. According to most teachers, physical comfort and health concerns are experienced either daily (32%), weekly (37%), or monthly (22%).

The following is a list of physical comfort and health issues that were identified by working groups. Each issue is ranked by the number of schools mentioning that issue. (Schools identifying a particular issue are noted in parentheses).

- poor air flow and ventilation are seen as potentially contributing to many health-related problems in the school (25, 31, 138, 142)

- noise and distraction problems are seen as either a low or moderate priority in open instructional areas (25, 31, 138, 142)

- cold zones in air-conditioned buildings are of constant concern (31, 138, 142)

- poor bathroom ventilation, due primarily from ineffectively operating ceiling fans, is causing some minor odor concerns (138, 142)

- old carpeting, especially at lower grade levels where students sit on the floor, is seen as a health concern (31, 32)

- excessive heat in the months from May through September is a concern for the one school without central air-conditioning (32)

- acoustic problems in bathrooms and corridors may be due to an over abundance of hard surface materials and the absence of sound absorbing materials such as acoustical ceiling tile and carpeting (32)

- concern over the scope of custodial responsibilities with respect to cleaning classroom counters (32)

- plumbing and drainage system has on a few occasions failed to prevent first floor flooding causing a potential health risk (142)

<u>Survey Findings</u>

Although most teachers surveyed feel they have little to no control (65%) over the physical comfort and health concerns at their school, and despite the feeling that physical comfort and health concerns have been somewhat hindering (44%) in providing an effective environment for teaching and learning, teachers feel that the manner in which physical comfort and health concerns have been dealt with at their schools has been somewhat fair (45%).

Overall, only 26% of teachers indicated they were somewhat to very disappointed with respect to how physical comfort and health concerns have been addressed.

An majority of teachers feel that physical comfort and health is very important (65%), in supporting the goal of maintaining a safe, healthy and nurturing learning climate, and very important (56%) in supporting the goal of increasing Student Academic Performance.

Table: Survey Findings for Physical Comfort and Health

	Daily	Weekly	Monthly	Yearly	Never
[1] How frequently do concerns of PHYSICAL COMFORT & HEALTH arise at your school?	33%	37%	22%	0%	7%

	Fair	Somewhat Fair	Neutral	Somewhat Unfair	Unfair
[2] Do you feel that the manner in which PHYSICAL COMFORT & HEALTH concerns have been dealt with at your school have been fair or unfair to teachers and students?	7%	52%	15%	22%	4%

	Complete Control	Significant Control	Some Control	Little Control	No Control
[3] To what degree do you feel you have control over PHYSICAL COMFORT & HEALTH issues at the school?	0%	8%	27%	38%	27%

	Very Helpful	Somewhat Helpful	Neutral	Somewhat Hindering	Very Hindering
[4] Have PHYSICAL COMFORT & HEALTH concerns you have identified above helped or hindered the efforts of your school to provide a safe environment for learning?	11%	19%	26%	44%	0%

	Very Pleased	Somewhat Pleased	Neutral	Somewhat Disappointed	Very Disappointed
[5] Overall, how pleased or disappointed are you to the extent to which PHYSICAL COMFORT & HEALTH concerns have been addressed at your school?	15%	22%	37%	22%	4%

	Very Important	Somewhat Important	Neutral	Somewhat Unimportant	Very Unimportant
[6] How important is PHYSICAL COMFORT & HEALTH in supporting the goal of...					
(a) maintaining a safe, healthy and nurturing learning climate?	65%	26%	4%	4%	0%
(b) increasing student achievement?	56%	37%	4%	4%	0%

Links to Educational Outcomes and Goals

Student Academic Performance

Physical Comfort and Health, in particular, concerns over thermal comfort, air flow, ventilation, and noise can have a significant affect on Student Academic Performance.

- Thermal comfort can be of real concern especially during periods when tests are being conducted. Students are often unable to concentrate as easily on tasks. (25, 31, 32, 138, 142)

- Poor air flow circulation and ventilation were the main causes of concern for all schools. Even when the few operable second floor windows are opened, very little fresh air can be effectively circulated. These conditions may be contributing to air borne bacteria causing many health-related problems which may in turn have the potential of influencing student

attitudes, mood, and ultimately performance through lost instructional time. (25, 31, 32, 138, 142)[16]

• Problems with noise in open space instructional areas is identified by the working group as a moderate priority that could have some influence on Student Academic Performance by continually distracting students from their work.(25, 138, 142)

• Concerns for lack of ventilation have kept one teacher from conducting science projects in his instructional area, hindering potential curricular choices that could impact Student Academic Performance.(142)

Student Social Development

Physical Comfort and Health concerns, in particular, thermal comfort, air flow, ventilation and noise can have a significant affect on Student Social Development.

• Teachers indicated that when students do not have the thermal comfort they need they become less interested in socializing and more interested in just surviving the heat or the cold. Some students withdrawal, while others become disruptive. (25, 31, 32, 138, 142)

• Poor air flow circulation and ventilation were the main causes of concern for all schools as well. Even when the few operable second floor windows are opened, very little fresh air can be effectively circulated. These conditions may be contributing to air borne bacteria causing many health-related problems which may in turn have the potential of influencing student attitudes and behavior and ultimately opportunities for positive social development. (25, 31, 32, 138, 142)

• Problems with noise in open space instructional areas is identified by the working group as moderate priority that could have some influence on the social development of students by continually distracting students from interaction with their immediate group. (25, 138, 142)

Teacher Instructional Performance

Physical Comfort and Health concerns, in particular, thermal comfort, air flow and noise, can have a significant influence on Teacher Instructional Performance.

• At times, the lack of thermal comfort can affect a teacher's attitude, mood and motivation to instruct, thereby affecting their performance. (25, 31, 32, 138, 142)

• Poor air flow circulation and ventilation were the main causes of concern for all schools. Even when the few operable second floor windows are opened, very little fresh air can be effectively circulated. These conditions may be contributing to air borne bacteria causing many health-related problems which may in turn have the potential of influencing Teacher Instructional Performance lost instructional time. (25, 31, 32, 138, 142)

• Problems with noise in open space instructional areas are identified by the working group as moderate priority that could have some influence on Teacher Instructional Performance.

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[16]Each issue is ranked by the number of schools mentioning that issue. Schools identifying a particular issue are noted in parentheses.

Constant distractions from neighboring classes can affected teacher mood and attitudes thereby affecting instructional performance. (25, 142)

2. Classroom Adaptability

Classroom Adaptability refers to the degree to which occupants feel that the physical classroom space can be adapted to different and desired educational activities and functions.

Issues and Concerns Raised

Fifty-percent of teachers responding to the survey indicated they are having problems with issues of classroom adaptability. Teachers experience problems on either a daily (14%), weekly (25%), or monthly (11%) basis.

The following is a list of classroom adaptability issues identified. Each issue is ranked by the number of schools mentioning that issue. (Schools identifying a particular issue are noted in parentheses).

- concerns over the effectiveness and adaptability of open plan versus self-contained classrooms (25, 142)

- computer installation and other problems limit classroom adaptability (32, 142)

- the need for additional storage space options (25)

- size and number of classroom tables seen as limiting options for self-contained classroom layout (32)

- inability to hang displays from concrete block walls limits available wall space (32)

- the need for additional electrical outlets in classrooms (31)

- difficulty conducting inter-class projects (32)

- problems with cooperative learning instruction in self-contained classrooms (32)

Survey Findings

An equal percentage of teachers feel they have little control over the classroom adaptability at their school as do those who feel they have significant control. However, only 38% of teachers feel that the manner in which classroom adaptability concerns have been dealt with at their schools has been fair or somewhat fair, as well as somewhat to very helpful (30%) in providing an effective environment for teaching and learning.

Overall, 50% of teachers are somewhat to very pleased with how classroom adaptability concerns have been addressed at their school.

A slight majority of teachers feel that classroom adaptability is either very important (52%), or somewhat important (34%) in supporting the goal of maintaining a safe, healthy and nurturing learning climate, and either very important (55%), or somewhat important (31%) in supporting the goal of increasing Student Academic Performance.

Table: Survey Findings for Classroom Adaptability

	Daily	Weekly	Monthly	Yearly	Never
[1] How frequently do you experience CLASSROOM ADAPTABILITY as a hindrance to your efforts?	14%	25%	11%	7%	43%

	Fair	Somewhat Fair	Neutral	Somewhat Unfair	Unfair
[2] Do you feel that concerns related to CLASSROOM ADAPTABILITY have been fair or unfair to teachers and students?	21%	17%	34%	24%	3%

	Complete Control	Significant Control	Some Control	Little Control	No Control
[3] To what degree do you feel you have control over the ADAPTABILITY of your classroom?	10%	24%	31%	24%	10%

	Very Helpful	Somewhat Helpful	Neutral	Somewhat Hindering	Very Hindering
[4] Have the ADAPTABILITY concerns you experience within your classroom helped or hindered your efforts to provide an effective environment for teaching and learning?	10%	20%	47%	23%	0%

	Very Pleased	Somewhat Pleased	Neutral	Somewhat Disappointed	Very Disappointed
[5] Overall, how pleased or disappointed are you in the extent to which your classroom is ADAPTABLE?	21%	29%	14%	32%	4%

	Very Important	Somewhat Important	Neutral	Somewhat Unimportant	Very Unimportant
[6] How important do you think CLASSROOM ADAPTABILITY is in supporting the goal of...					
(a) maintaining a safe, healthy and nurturing learning climate?	54%	25%	21%	0%	0%
(b) increasing student achievement?	50%	29%	18%	4%	0%

Links to Educational Outcomes and Goals

One task of the workshop was to identify with more specificity the classroom adaptability issues that may influence three educational outcomes:

Student Academic Performance

Classroom Adaptability, in particular, concerns over both open plan and self-contained classrooms and technological adaptability, can have a significant affect on Student Academic Performance.

• Open plan instructional areas are seen as having an affect on Student Academic Performance. The open plan arrangement, the working groups argued, causes problems with noise and distractions from other classes that tend to break students' concentration. (25, 31, 138, 142).

• One working group feels that the availability of electrical outlets and lack of wire cable runs for future computer installation may influence classroom adaptability thereby potentially affecting Student Academic Performance. (31)

• The requirement to use tables for cooperative learning takes up more room than the chairs once did. The inefficient layout and installation of new classroom computers in a few rooms take up even more space. The tightness of space and of working groups does not provide students, at times, with enough of a work surface to do their work creating distractions and affecting the quality of their work. (32)

Student Social Development

Classroom Adaptability, in particular, concerns over open plan and self-contained classrooms can have a significant affect on Student Social Development.

- Open plan instructional areas are seen as having an affect on Student Social Development. Managing class activities in an open space in a manner sensitive to other classes, limits the range of behavior and activities that can take place, such as music, dance, and other activities requiring movement of tables and chairs in the classroom. (25, 31, 138, 142).

- The requirement to use tables for cooperative learning take up more room than the chairs once did. The inefficient layout and installation of new classroom computers in a few rooms that take up even more space. The tightness of space and of working groups does not provide students at times with enough of a work surface to do their work creating distractions and affecting the effectiveness of their work. (32)

Teacher Instructional Performance

Classroom Adaptability concerns, in particular, the design and adaptability of both open plan and self-contained classrooms, and technological adaptability, and available display and storage space, can have a significant affect on Teacher Instructional Performance.

- Open plan instructional areas were seen as having an affect on Teacher Instructional Performance. In much the same way as with students, teachers are constantly distracted from noises and movement from other classes around them. These distractions can decrease, to some degree the effectiveness of their instruction. In addition, open instructional areas do not have enough wall space or chalkboard space. Some teachers compensate for the lack of wall space by hang posters from the ceiling, or placing displays over semi-transparent windows. (25, 31, 138, 142).

- Instituting a cooperative learning philosophy into the existing self-contained classrooms was seen as a welcome albeit challenging change for teachers with respect to classroom adaptability. A few teachers see these changes limit classroom flexibility impacting their instructional performance . All desks were replaced by classroom tables causing problems with the flexibility of classroom space: desks were seen by some teachers as providing more flexibility than bigger tables which took up the majority of classroom space. The classroom table issue impacted the ability of teachers in some cases to effectively conduct cooperative learning exercises that at times required free movement which is obviously difficult to do in a room occupied by tables. (32)

- There was some concern over the installation of the computers that resulted in a limited use of valuable bulletin board space in several classrooms. It appeared to the working group that the computers could be organized in such as way to limit the amount of direct wall space they occupied by grouping them back to back. This issue was seen as potentially affecting instructional performance. (32)

- Teachers mentioned wall hanging problems in warm weather as being one problem that often affected their instructional performance by forcing them to take time out of their planning to re-hang visuals, posters and student artwork. (32)

- Although teachers feel they have adequate storage, it is just not properly organized or managed as well as it could be. As a result, it is hard to conduct an inventory of books

and supplies and there is no room for additional storage needs. Books and supplies stored in open instructional areas are routinely stolen or misplaced. (142)

3. Safety & Security

Safety and Security refers to the degree to which occupants feel the school building contributes to protecting occupants from harm, injury, or undue risk.

Issues and Concerns Raised

Most teachers indicated they experienced safety and security problems on a regular basis. No respondent claimed to never having experienced a safety and security concern. According to teachers, safety and security issues occur most often on a weekly (33%) or monthly (41%) basis.

Of all the ten attributes of environmental quality, Safety and Security was the most often mentioned high priority concern for all five schools.

The following are a list of safety and security issues identified. Each issue is ranked by the number of schools mentioning that issue. (Schools identifying a particular issue are noted in parentheses).

- concerns over neighborhood quality seen as compromising school safety and security (25, 31, 32, 138, 142)

- unsafe playgrounds and playground equipment contribute to safety problems (25, 31, 32, 138, 142)

- concerns over intruders and securing multiple points of entry (31, 32, 138, 142)

- poor outdoor lighting near parking lots encourage safety and security problems (25, 31)

- psychological safety on the building grounds (25, 138)

- child safety with parking lot vehicular traffic (32, 142)

- locked and semi-transparent windows increase security, but compromise visibility and daylight (32, 142)

- lack of garbage pick-up around dumpsters contributes to safety problems for students who play in the area (32, 138)

- inadequate emergency lighting in stairwells a safety risk (31)

- deterioration and lack of maintenance of city alley behind school a safety concern (25, 32)

- poor upkeep of grounds seen as a potential safety concern (31, 138)

- congested main stair during arrivals and dismissal may compromise safety (138)

Survey Findings

Despite the relatively high perceived frequency of safety and security issues, most teachers feel they have some control (55%) over their personal safety at their school. In addition, 69% of teachers feel that the manner in which safety and security concerns have been addressed have been

fair to somewhat fair, as well as somewhat helpful (41%) in providing a safe environment for teaching and learning. Overall, 50% teachers are somewhat to very pleased with how safety and security concerns have been addressed at their school.- - - - - - -- - - -

A majority of teachers surveyed feel that safety and security is very important (72%) in supporting the goal of maintaining a safe, healthy and nurturing learning climate, and very important (64%) in supporting the goal of increasing Student Academic Performance.

Table: Survey Findings for Safety & Security

	Daily	Weekly	Monthly	Yearly	Never
[1] How frequently do SAFETY & SECURITY issues occur?	11%	33%	41%	15%	0%

	Fair	Somewhat Fair	Neutral	Somewhat Unfair	Unfair
[2] Do you feel that the manner in which SAFETY & SECURITY concerns have been dealt with at your school have been fair or unfair to teachers and students?	38%	31%	10%	21%	0%

	Complete Control	Significant Control	Some Control	Little Control	No Control
[3] To what degree do you feel you have control over your personal SAFETY at your school?	3%	21%	55%	21%	0%

	Very Helpful	Somewhat Helpful	Neutral	Somewhat Hindering	Very Hindering
[4] Have SAFETY & SECURITY concerns helped or hindered the efforts of your school to provide a safe environment for teaching and learning?	15%	41%	33%	11%	0%

	Very Pleased	Somewhat Pleased	Neutral	Somewhat Disappointed	Very Disappointed
[5] Overall, how pleased or disappointed are you in the extent to which SAFETY & SECURITY concerns have been addressed?	10%	40%	27%	23%	0%

	Very Important	Somewhat Important	Neutral	Somewhat Unimportant	Very Unimportant
[6] How important do you think SAFETY & SECURITY is in supporting the goal of...					
(a) maintaining a safe, healthy and nurturing learning climate?	72%	21%	7%	0%	0%
(b) increasing student achievement?	64%	18%	14%	4%	0%

Links to Educational Outcomes and Goals

One task of the workshop was to identify with more specificity the safety and security issues that may influence three educational outcomes:

Student Academic Performance

Safety and Security concerns, in particular, concerns over poor neighborhood quality, feelings of safety on building grounds, and safety from intruders, can significantly affect Student Academic Performance.

   • Safety and security as represented by the issues of poor neighborhood quality and psychological safety on school building grounds, is seen by teachers to potentially affect Student Academic Performance as illustrated by their students' preoccupation with problems at home which take time away from focused school work. (25, 31, 32, 138, 142)

• Teachers in the working group are well aware of the implications of safety and security problems on the ability of students to focus on learning. Due to recent incidents the custodian has established a new policy to lock the main entrance doors very soon after classes start and again directly after dismissal. The students' awareness of these incidents further contributes to an inability to focus on the their work. (31)

Student Social Development

Safety and Security concerns, in particular, poor neighborhood quality, lack of safe places to play, feelings of safety, and safety from intruders, can significantly affect Student Social Development.

• Student Social Development was perceived by teachers to be affected by poor neighborhood quality as illustrated by in-school fighting, the result of social behavior learned at home or in the community subsequently brought into the school.(25, 31, 32, 138, 142)

• Safety on the playground is interpreted by the working group to hinder possibilities for Student Social Development, in that the deteriorating conditions of the playground and equipment do not as easily support teachers' attempts at organizing constructive play, thereby creating more reluctance on the part of the teacher to have students play on the grounds. Playground safety has also been seen as a high-priority problem. As is a problem at many Baltimore City schools, the playground has not been updated since the school's original construction. Outdated metal pipe "jungle gym" playground equipment has slowly degraded to the point of being extremely unsafe. (25, 31, 32, 138, 142)

• The presence of vehicular traffic is seen as potentially inhibiting social development of students through the limited opportunities for safe places to play. (31, 142)

• Teachers in the working group are well aware of the implications of intruders on the social development of their students. Students are aware of the defensive stance the school must take with regard to visitors and intruders. Due to recent incidents the custodian has established a new policy to lock the main entrance doors very soon after classes start and again directly after dismissal. (31)

Teacher Instructional Performance

Safety and Security concerns, in particular, concerns over poor neighborhood quality, feelings of safety, safety from intruders, and the securing of personal belongings, can have a significant affect on Teacher Instructional Performance.

• Due to poor neighborhood quality, an ever-present undercurrent of anxiety is created in the minds of many teachers. Perceived psychological safety on building grounds can have an affect on teachers' attitudes and moods. Bad experiences teachers bring into the school can adversely affect their ability to focus on the task of teaching.(25, 31, 32, 138, 142)

• The physical state of the school and its grounds can also have an affect on Teacher Instructional Performance. Locked and frosted windows constantly remind teachers of the surroundings. Stories of past intruders remind teachers of the lack of control they have at times even within the building. Although teachers feel psychologically safe within the building and often claim to be habituated to the situation, an ever present concern for their safety and the safety of their students pervades their day and is every so often heightened by new events that may impact them directly. These feelings, they argue, indirectly affect their performance by distracting them from their immediate task of teaching. (25, 31, 32, 138, 142)

- Although recent steps have been taken by the school to cut down on intruders, teachers in the working group are very aware of the intruder safety problem on their ability to focus on the instructional need of their students.(31, 138)

- Security concerns over teachers' locked storage is believed to serve as a distracter on a teacher's ability to focus on instruction. Teachers should not have to worry about whether his or her personal belongings are secure or not. (31, 32, 138, 142)

4. Building Functionality

Building Functionality refers to the degree to which occupants feel the various places within the school building are functionally compatible with the school's educational programs and activities.

Issues and Concerns Raised

Sixty-four percent of teachers experience problems with building functionality. Most teachers encounter building functionality issues daily (25%) and weekly (21%).

The following is a list of building functionality issues identified. Each issue is ranked by the number of schools mentioning that issue. (Schools identifying a particular issue are noted in parentheses).

- ADA Accessibility (Americans With Disability Act) (25, 31, 32, 138)

- lack of both playground equipment and an adequate tot lot area are seen as limiting functional use of the building grounds (138)

- congestion in the main stair during morning arrivals and dismissals compromises efficient circulation and movement (138)

- an underutilized library/media center limits effective building functionality (142)

- problems with parents finding way to child's classroom may be a consequence of unclear functional layouts and signage (142)

- unorganized central storage room limits functionality (142)

- crowded administrative area not functional (142)

- inadequate lobby design creates some functional problems (142)

- mismatch between community school vision and facility layout (142)

- teachers' lounge (31)

- cafeteria/auditorium divider partition in disrepair (31)

- lack of assembly space severely limits for school-wide activities (142)

Survey Findings

Most teachers feel they have little or no control-(69%) over the building functionality at their school. In addition, only 41% of teachers responding to the survey feel that the manner in which building functionality concerns have been dealt with have been fair to somewhat fair, as well as somewhat to very hindering (38%) in providing an effective environment for teaching and learning. Overall, only 31% of teachers are somewhat to very pleased with how building functionality concerns have been addressed.

A majority of teachers feel that building functionality is either very important (52%), or somewhat important (34%) in supporting the goal of maintaining a safe, healthy and nurturing learning climate, and either very important (55%), or somewhat important (31%) in supporting the goal of increasing Student Academic Performance.

Table: Survey Findings for Building Functionality

	Daily	Weekly	Monthly	Yearly	Never
[1] How frequently do you encounter issues of BUILDING FUNCTIONALITY?	25%	21%	11%	7%	36%
	Fair	Somewhat Fair	Neutral	Somewhat Unfair	Unfair
[2] Do you feel that problems of BUILDING FUNCTIONALITY have been fair or unfair to teachers and students?	24%	17%	34%	17%	7%
	Complete Control	Significant Control	Some Control	Little Control	No Control
[3] To what degree do you feel you have control over the BUILDING FUNCTIONALITY in the school?	3%	7%	21%	28%	41%
	Very Helpful	Somewhat Helpful	Neutral	Somewhat Hindering	Very Hindering
[4] Have BUILDING FUNCTIONALITY concerns helped or hindered the efforts of your school to provide an effective environment for teaching and learning?	4%	18%	43%	32%	4%
	Very Pleased	Somewhat Pleased	Neutral	Somewhat Disappointed	Very Disappointed
[5] Overall, how pleased or disappointed are you in the extent to which BUILDING FUNCTIONALITY concerns have been addressed at your school?	10%	21%	52%	17%	0%
	Very Important	Somewhat Important	Neutral	Somewhat Unimportant	Very Unimportant
[6] How important do you think BUILDING FUNCTIONALITY is in supporting the goal of...					
(a) maintaining a safe, healthy and nurturing learning climate?	52%	34%	14%	0%	0%
(b) increasing student achievement?	55%	31%	10%	1%	0%

Links to Educational Outcomes and Goals

One task of the workshop was to identify with more specificity the building functionality issues that may influence three educational outcomes:

Student Academic Performance   -

Building Functionality concerns, in particular, concerns over handicapped accessibility and mismatches between building layout and educational programs, can influence Student Academic Performance.

- Concerning the issue of ADA Accessibility, several of the working groups reasoned that although they did not have an physically disabled students, if they were to have one, accessibility issues might affect that student's- ability to use the entire facility, thus affecting that student's performance. (25, 31, 32, 138, 142)

- Currently, mismatches between building functionality and organizational activities in one school are perceived by teachers to be affecting Student Academic Performance. Instructional space has been occupied by various outside agencies limiting the size and thus the functional effectiveness of many open space instructional areas.(142)

Student Social Development

Building Functionality concerns, in particular, handicapped accessibility, lack of adequately equipped outdoor playareas, and space for school-wide assemblies, can have a significant affect on the social development students.

- Concerning the issue of ADA Accessibility, several the working groups reasoned that although they did not have an physically disabled students, if they were to have one, accessibility issues might affect that student's ability to use the entire facility. Due to limited access to the school building, a physically disabled student would not able to participate in all the activities of the school, thereby limiting his or her social development. (25, 31, 32, 138).

- The playground is interpreted by the working group as inadequately functioning to support teachers' efforts to organize constructive outdoor play, limiting opportunities for Student Social Development. (142)

- Currently, mismatches between building functionality and organizational activities in one school are perceived by teachers to be affecting social development. (142)

- The lack of space for school-wide assemblies limits opportunities for quality social interchange between a larger group of students, teachers and the community. (142)

Teacher Instructional Performance

Building Functionality concerns, in particular, concerns over mismatches between building layout and educational programs, can affect Teacher Instructional Performance.

- Currently, mismatches between building functionality and organizational activities in one school are perceived by teachers to be affecting their own performance. Due to the influx of outside community agencies in the school, created as a result of a community school vision, open-plan instructional space has been compromised decreasing the availability of space for instruction. (142)

- Teachers feel their performance suffers when supportive instructional spaces have not been managed well: they must cope with an abandoned library/media center, unorganized centralized storage rooms, a crowded administration area, and directing lost parents who cannot find their student's classroom.(142)

5. Aesthetics & Appearance

Aesthetics & Appearance refers to the degree to which occupants feel the school building is attractive and provoking.

Issues and Concerns Raised

Sixty-nine percent of teachers responding to the survey claim to experience concerns over aesthetics and appearance of their school. The frequency of experience is broad ranging from daily to weekly (30%) and monthly to yearly (38%).

The following is a list of classroom adaptability issues identified. Each issue is ranked by the number of schools mentioning that issue. (Schools identifying a particular issue are noted in parentheses).

- the appearance of existing playgrounds is of concern (25, 31, 32, 138, 142)

- semi-transparent windows are seen as unsightly (25, 31, 32, 138, 142)

- the upkeep of the grounds was a concern (25, 31, 138)

- concerns over the appearance of the neighboring property and city alley (25, 32, 138)

- old carpeting is seen as hindering the appearance of the school (31)

Although not of concern, the following issues were discussed:

- the interior of the school is perceived as clean and orderly (25, 31, 32, 138)

- interest in landscape projects as a way to improve the appearance of the grounds considered (142)

Survey Findings

Seventy-three percent of teachers feel they have some to significant control over the aesthetics and appearance concerns at their school. Supporting this finding is that the same 73% of teachers feel that the manner in which aesthetics and appearance concerns have been dealt with have been fair to somewhat fair, as well as very to somewhat helpful (62%) in providing an effective environment for teaching and learning. Overall, 77% of teachers are very to somewhat pleased with how aesthetics and appearance concerns have been addressed.

A majority of teachers feel that aesthetics and appearance is either very important (64%), or somewhat important (32%) in supporting the goal of maintaining a safe, healthy and nurturing learning climate, and either very important (56%), or somewhat important (30%) in supporting the goal of increasing Student Academic Performance.

Table: Survey Findings for Aesthetics & Appearance

	Daily	Weekly	Monthly	Yearly	Never
[1] How frequently do concerns with AESTHETICS & APPEARANCE arise at your school?	15%	15%	19%	19%	31%

	Fair	Somewhat Fair	Neutral	Somewhat Unfair	Unfair
[2] Do you feel that the manner in which AESTHETICS & APPEARANCE concerns have been dealt with at your school have been fair or unfair to teachers and students?	.46%	27%	23%	4%	0%

	Complete Control	Significant Control	Some Control	Little Control	No Control
[3] To what degree do you feel you have control over the AESTHETICS & APPEARANCE of the school?	4%	27%	46%	23%	0%

	Very Helpful	Somewhat Helpful	Neutral	Somewhat Hindering	Very Hindering
[4] Have AESTHETICS & APPEARANCE CONCERNS you have identified above helped or hindered the efforts of your school to provide a safe environment for learning?	31%	31%	35%	4%	0%

	Very Pleased	Somewhat Pleased	Neutral	Somewhat Disappointed	Very Disappointed
[5] Overall, how pleased or disappointed are you in the extent to which AESTHETICS & APPEARANCE concerns have been adequately addressed at your school?	42%	35%	19%	4%	0%

	Very Important	Somewhat Important	Neutral	Somewhat Unimportant	Very Unimportant
[6] How important is AESTHETICS & APPEARANCE in supporting the goal of...					
(a) maintaining a safe, healthy and nurturing learning climate?	64%	32%	4%	0%	0%
(b) increasing student achievement?	56%	30%	11%	4%	0%

Links to Educational Outcomes and Goals

Student Academic Performance

Aesthetics & Appearance concerns, in particular, a school's cleanliness, orderliness and character, can have an affect on student academic performance.

> • The school building was perceived as influencing students' impressions of the school. Clean and shiny floors, fluorescent light strips that brightly shine without flickering, displays that are orderly and colorful, these are the symbols of a school that is on a progressive track toward excellence. The quality of aesthetics and appearance is perceived as instilling cultural awareness and pride in students. Maintaining a positive appearance of the building reinforces positive atmosphere students to learn in. (25, 31, 32, 138, 142)

Student Social Development

Aesthetics and Appearance concerns, in particular, a school's cleanliness, orderliness and character, can have an affect on Student Social Development.

> • The appearance of the school, it's cleanliness, orderliness and character are believed by some teachers to influence Student Social Development. The school building was perceived as influencing occupant and visitors' first impressions of the school. To teachers, a clean school equals an orderly school. Clean and shiny floors, fluorescent

light strips that brightly shine without flickering, displays that are orderly and colorful, these are the symbols of a school that is on a progressive track toward excellence. The quality of aesthetics and appearance is perceived as instilling cultural awareness and pride in students as well as visitors to the school. Maintaining a positive appearance of the building reinforces personalization and ownership for not only its occupants, but for the community as well. (25, 31, 32, 138, 142)

• The poor appearance of the building grounds and lack of visually attractive playground equipment in all schools in the study are seen by some working groups as having an influence on students' social development.(25, 31, 32, 138, 142)

Teacher Instructional Performance

Aesthetics and Appearance concerns, in particular, a school's cleanliness, orderliness and character, can have an affect on Teacher Instructional Performance.

• The appearance of the school, it's cleanliness, orderliness and character are believed by some teachers to their own performance. A clean and orderly school that eliminates visual distractions as well as providing bright and cheerful surroundings can motivate teachers to teach. As one teacher stated, "An appealing school makes [the] school inviting, and a place you want to be." (25, 31, 32, 138, 142)

6. Personalization & Ownership

Personalization and Ownership refers to the degree to which occupants feel the school building offers opportunities to create a personal and self-expressive environment and engender a sense of ownership.

Issues and Concerns Raised

As many as 77% of teachers experience problems over personalization and ownership concerns in their school. Most often concerns over personalization and ownership are experienced either weekly (23%) or monthly (35%).

The following is a list of the personalization and ownership issues identified.

- within the school, teachers provide many opportunities for students to personalize their classrooms and corridor displays (25, 31, 32, 138, 142)

- lack of neighborhood quality, playground safety, and upkeep of grounds are all seen as reflecting a poor sense of ownership of the school grounds on the part of the community (25, 31, 138)

- lack of personal space for students can limit opportunities for personalization (32, 138, 142)

- sharing lockers with other students limits opportunities for personalization and ownership (138, 142)

- although difficult to maintain, landscaping projects are seen as providing an increased ownership of the school grounds by students (138, 142)

- providing signs of academic unity are seen as strengthening a sense of school ownership in students (142)

Survey Findings

Most teachers feel they have significant control (52%) over the personalization and ownership concerns at their school. Additionally, 67% of teachers feel that the manner in which personalization and ownership concerns have been addressed have been fair to somewhat fair, as well as very to somewhat helpful (62%) in providing an effective environment for teaching and learning. Overall, teachers pleasure or dissatisfaction range from very to somewhat pleased (59%) with how personalization and ownership concerns have been addressed.

A majority of teachers feel that personalization and ownership is either very important (38%), or somewhat important (38%) in supporting the goal of maintaining a safe, healthy and nurturing learning climate, and either very important (36%), or somewhat important (36%) in supporting the goal of increasing Student Academic Performance.

Table: Survey Findings for Personalization & Ownership

	Daily	Weekly	Monthly	Yearly	Never
[1] How frequently are issues pertaining to PERSONALIZATION & OWNERSHIP discussed at your school?	4%	23%	35%	15%	23%

	Fair	Somewhat Fair	Neutral	Somewhat Unfair	Unfair
[2] Do you feel that the opportunities for PERSONALIZATION & OWNERSHIP within your school are					
(a) fair or unfair to teachers?	48%	17%	24%	10%	0%
(b) fair or unfair to students?	41%	28%	24%	7%	0%

	Complete Control	Significant Control	Some Control	Little Control	No Control
[3] To what degree do you feel you have control over the PERSONALIZATION & OWNERSHIP of your classroom and school overall?	7%	52%	28%	10%	3%

	Very Helpful	Somewhat Helpful	Neutral	Somewhat Hindering	Very Hindering
[4] Have PERSONALIZATION & OWNERSHIP issues helped or hindered the efforts of your school to provide an effective environment for teaching and learning?	31%	31%	31%	7%	0%

	Very Pleased	Somewhat Pleased	Neutral	Somewhat Disappointed	Very Disappointed
[5] Overall, how pleased or disappointed are you in the extent to which PERSONALIZATION & OWNERSHIP concerns have been addressed at your school?	21%	38%	28%	10%	3%

	Very Important	Somewhat Important	Neutral	Somewhat Unimportant	Very Unimportant
[6] How important do you think PERSONALIZATION & OWNERSHIP is in supporting the goal of...					
(a) maintaining a safe, healthy and nurturing learning climate?	38%	38%	21%	3%	0%
(b) increasing student achievement?	36%	36%	29%	0%	0%

Links to Educational Outcomes and Goals

Student Academic Performance

Personalization and Ownership concerns, in particular, encouraging ownership of school grounds, as well as providing opportunities for self-expression within the school, can have an affect on Student Academic Performance.

- The lack of neighborhood quality illustrated by lack of ownership of the school grounds is seen as potentially affecting student attitudes and behavior that may hinder their performance. Evidence of this lack of ownership confronts students and teachers alike everyday: garbage, broken bottles, graffiti and other paraphernalia are strewn across the school site. (25, 31, 32, 138, 142)

- Within the school however, teachers and students are capable of personalizing their space and have gained a strong sense of ownership in their school. Students learn the importance of taking responsibility for their actions. These attitudes, according to working groups, eventually influence their academic performance as well. (25, 31, 32, 138, 142)

Student Social Development

Personalization and Ownership concerns, in particular, encouraging ownership of school grounds, as well as providing opportunities self-expression within the school, can have a significant affect on Student Social Development.

- The lack of neighborhood quality illustrated by lack of ownership of the school grounds is seen as potentially affecting student attitudes and behavior that may hinder social development. (25, 31, 32, 138, 142)

- Within the school however, teachers and students are capable of personalizing their space and have gained a strong sense of ownership in their school. Students learn the importance of taking responsibility by sharing in classroom clean-up routines, helping with the hanging of wall displays, being involved in landscaping projects and other similar group activities outside of more formal instruction. (25, 31, 32, 138, 142)

- Students have few ways to personalize their area, as they may have been able to do when they had their own desk. The teachers try to compensate by placing students' work on the walls of the classroom and in the hallways of the school thereby instilling a sense of personalization and ownership on a larger scale (i.e., 'this is my classroom, this is my school'). (25, 31, 32, 138, 142)

- Where personalization and ownership qualities are clearly in view is at the main entrance lobby of each school. It is here where the life of the school is visually expressed with an abundance of slogans on the walls, posters announcing events, and flyers littered on waiting tables. (25, 31, 32, 138, 142)

- Teachers often personalize their instructional areas even though at first glance each area appears to have common features similar to others in the pod. Within guidelines established by teachers, there is evidence students have opportunities to personalize as well as take ownership in their instructional area. (25, 138)

- Within the school, teachers provide many opportunities for students to personalize their classrooms by displaying student work, and to take ownership of their school through participation in the Safeties, Plant Brigade, and other school service-related tasks.(31)

Teacher Instructional Performance

Personalization and Ownership concerns, in particular, encouraging ownership of school grounds, as well as providing opportunities for self-expression within the school, may have an affect on Teacher Instructional Performance.

- The lack of neighborhood quality illustrated by lack of ownership of the school grounds is seen as potentially affecting attitudes and behavior that may hinder Teacher Instructional Performance. (25)

- Teachers often personalize their instructional areas even though at first glance each area appears to have common features similar to others in the pod.(25)

7. Places for Social Interaction (Social Places)

Social Places (Places for Social Interaction) refers to the degree to which occupants feel that places within the school building provide opportunities for meaningful social exchange and interaction.

Issues and Concerns Raised

Fifty-nine percent of teachers responding to the survey indicated that they never experience any concerns over social places in the school. Only 26% of teachers experience problems on a weekly or monthly basis.

The quality of social places was one of the perceived qualities that garnered the least attention. One possible reason for this is that the entire school promotes continuous social interaction and therefore is never recognized as an issue by occupants.

The following is a list of social place issues identified.

- playground safety concerns seen as limiting opportunities for social interaction (25, 31, 32, 138, 142)

- entrance lobby effectively provides opportunities for social encounters and demonstrates the spirited personality of the school (25, 31, 32, 138, 142)

- inadequate size of classroom tables hinders constructive social interaction for older students (32)

- inadequate teachers' lounge discourages use and therefore, opportunities for informal contact with peers (31)

- centralized Commons acts as a true community forum providing many opportunities for informal social encounters (25)

- location of Parent Academy adjacent to the entrance lobby provides further opportunities for social exchange (32)

- underutilized library/media area at the center of the school a lost opportunity as a space to support social interaction (142)

Survey Findings

Although teachers claim not to experience any social place concerns, over half of teachers (53%) indicate they have little to no control over the use of social places in the school.

If addition, while 52% of teachers feel that the manner in which concerns for social places have been dealt with at their schools has been fair to somewhat fair, only 37% of teachers feel that concerns over social places that have been dealt with have been somewhat to very helpful in providing an effective environment for teaching and learning.   -

Overall, 42% of teachers are somewhat to very pleased with how concerns over social places have been addressed at their school.

A majority of teachers feel that social places are either very important (52%), or somewhat important (34%) in supporting the goal of maintaining a safe, healthy and nurturing learning

climate, and either very important (55%), or somewhat important (31%) in supporting the goal of increasing Student Academic Performance.

Table: Survey Findings for Places for Social Interaction

	Daily	Weekly	Monthly	Yearly	Never
[1] How frequently are concerns over SOCIAL PLACES an issue at your school?	7%	11%	15%	7%	59%

	Fair	Somewhat Fair	Neutral	Somewhat Unfair	Unfair
[2] Do you feel that the quality of SOCIAL PLACES within your school are					
(a) fair or unfair to teachers?	37%	15%	30%	19%	0%
(b) fair or unfair to students?	35%	15%	27%	23%	0%

	Complete Control	Significant Control	Some Control	Little Control	No Control
[3] To what degree do you feel you have control over SOCIAL PLACES in your school?	7%	19%	22%	30%	22%

	Very Helpful	Somewhat Helpful	Neutral	Somewhat Hindering	Very Hindering
[4] Have SOCIAL PLACES helped or hindered the efforts of your school to provide a safe environment for teaching and learning?	7%	30%	52%	7%	4%

	Very Pleased	Somewhat Pleased	Neutral	Somewhat Disappointed	Very Disappointed
[5] Overall, how pleased or disappointed are you in the extent to which opportunities for SOCIAL PLACES have been provided at your school?	7%	37%	37%	15%	4%

	Very Important	Somewhat Important	Neutral	Somewhat Unimportant	Very Unimportant
[6] How important do you think SOCIAL PLACES are in supporting the goal of...					
(a) maintaining a safe, healthy and nurturing learning climate?	26%	48%	22%	4%	0%
(b) increasing student achievement?	26%	48%	19%	7%	0%

Links to Educational Outcomes and Goals

Student Academic Performance

Places for Social Interaction, in particular, concerns over table groupings, may have an affect on Student Academic Performance.

- The majority of students and teachers are isolated in self-contained classrooms. Within the classroom, most of the social activity takes place at the classroom tables (#6) which often may be a hindrance to desired learning behaviors. On the other hand, classroom tables can support desired cooperative learning behaviors. To some teachers in the working group, however, these tables were seen as a hindrance to Student Academic Performance. The interplay of factors contributing to this perception include the age of the student, or their close proximity to one another at tables. (Tables intended for four or six are often shared by eight.) (32)

Student Social Development

Places for Social Interaction, in particular, concerns over adequate management of playgrounds and cafeterias and providing opportunities for informal social interaction in main lobby spaces, can have an influence on Student Social Development.

- The playground and the cafeteria are the two locations that students are free to express themselves and let off some energy. Even with teacher concerns over the lack of opportunities for constructive play, students find imaginative ways to make the playground their own. (25, 31, 32, 138, 142)

- The most openly social place in all of the schools in the study is the main lobby and main office waiting area. It is this area that provides the liveliness, and rich informal social interaction throughout the day. This combination of areas serves to support social development of students. (25, 31, 32, 138, 142)

- The centralized location of the Commons serves as a true community forum. The Commons was observed as serving as a cafeteria, student meeting area, staff meeting space, community commons and informal social encounter space that clearly supports social development. (25)

- Even though the underutilized library/media center is not programmed for any particular purpose, it has become an informal place for students from various classes to informally gather and socialize, and serves as a small group instructional area as well. One teacher has allowed her students to spill over into the unused space if they need more privacy for doing their work. (142)

- Shared lockers are seen as a place encouraging social development even though sharing may produce feelings of lack of privacy, and lack of personalization and ownership on the part of students. (142)

Teacher Instructional Performance

Places for Social Interaction, in particular, the opportunity for a variety of informal social places other than the teachers' lounge, may have an affect on Teacher Instructional Performance.

- The non-use of the teacher lounge as a social place was not seen as a problem for teachers given that they informally interact with each other in other places in the school such as their own classrooms, corridors, administrative offices and in numerous staff meetings. (32, 142)

8. Privacy

Privacy refers to the degree to which occupants feel that there are places within the school building which provide opportunities for an individual or a small group to be free from the intrusion of others.

Issues and Concerns Raised

Sixty-five percent of teachers indicate they experience concerns over their own privacy, or the privacy needs of their students, on either a daily (19%), weekly (15%), or monthly (19%) basis.

The following is a list of privacy issues identified.

- the issue of open plan versus self-contained classrooms is seen as having an affect on privacy for students (i.e., having room for activity areas or learning stations). (25, 32, 138, 142)

- teachers have opportunities for privacy, such as the teachers' lounge, but they are not always used due to the shortage of time. (31, 32, 142)

- sharing lockers with other students limits opportunities for privacy. (138, 142)

- self-contained classrooms limit the ability of teachers to provide semi-private work areas for students in need of such space. (32)

Survey Findings

Even with half of teachers experiencing little or no control (51%) over privacy needs, only 26% feel that the manner in which privacy concerns have been dealt with at their school has been somewhat unfair or unfair to students and teachers, as well as only 17% feeling privacy is somewhat hindering the efforts of the school to provide an effective environment for teaching and learning. Overall, teachers are very to somewhat pleased (38%) with how privacy concerns have been addressed.

Many teachers feel that privacy is either very important (38%), or somewhat important (34%) in supporting the goal of maintaining a safe, healthy and nurturing learning climate, and either very important (38%), or somewhat important (28%) in supporting the goal of increasing Student Academic Performance.

Table: Survey Findings for Privacy

	Daily	Weekly	Monthly	Yearly	Never
[1] How frequently are concerns for PRIVACY at issue in your school?	19%	15%	19%	12%	35%

	Fair	Somewhat Fair	Neutral	Somewhat Unfair	Unfair
[2] Do you feel that the opportunities for PRIVACY within your school are					
(a) fair or unfair to teachers?	29%	25%	18%	14%	14%
(b) fair or unfair to students?	28%	24%	24%	14%	10%

	Complete Control	Significant Control	Some Control	Little Control	No Control
[3] To what degree do you feel you have control over your PRIVACY?	7%	21%	21%	41%	10%

	Very Helpful	Somewhat Helpful	Neutral	Somewhat Hindering	Very Hindering
[4] Have PRIVACY concerns helped or hindered the efforts of your school to provide a effective environment for teaching and learning?	7%	21%	52%	17%	3%

	Very Pleased	Somewhat Pleased	Neutral	Somewhat Disappointed	Very Disappointed
[5] Overall, how pleased or disappointed are you in the extent to which PRIVACY concerns have been addressed?	14%	24%	38%	21%	3%

	Very Important	Somewhat Important	Neutral	Somewhat Unimportant	Very Unimportant
[6] How important do you think PRIVACY is in supporting the goal of...					
(a) maintaining a safe, healthy and nurturing learning climate?	38%	34%	24%	3%	0%
(b) increasing student achievement?	38%	28%	24%	10%	0%

Links to Educational Outcomes and Goals

Student Academic Performance

Privacy concerns, in particular, concerns over acoustic and visual privacy in open space instructional areas and personal space at table groupings, can have a significant affect on Student Academic Performance.

- Open space instructional areas are seen by the working group as providing little privacy for students which has the potential to affect Student Academic Performance. The performance of some students who work well in small groups or in privacy that are unable to do so because of the physical layout of the school, may suffer. Some classroom areas within the school provide places such as corners or activity areas, others do not. Several teachers indicated that students are allowed to go to any place within the classroom, but often only a few choose this option. (25, 138, 142)

- When students don't always get the personal space they need, the situation often results in fights. One teacher stated: "We average several fights a week." In a situation such as this, students can become territorial about their workspace and this can become another major obstacle to securing their sense of privacy and personal space. Self-contained classrooms limit the ability of teachers to provide semi-private work areas for students in

need of a such as place. Crowded classroom tables in these classrooms add to this perception. (32)

Student Social Development

Privacy concerns, in particular, concerns over acoustic and visual privacy in open space instructional areas, can have a significant affect on Student Social Development.

- Open space instructional areas are seen by the working group as providing little privacy for students and that has the potential to affect Student Social Development. Some students do not work well in large instructional groups, needing at times some privacy to conduct their work. When not afforded these opportunities, students may become disruptive in class, causing fights. Some classroom areas within the school provide places such as corners or activity areas, others do not. Several teachers indicated that students are allowed to go to any place within the classroom, but often only a few choose this option. (25, 138, 142)

- Added to the lack of privacy during instruction, students must continue to experience the lack of privacy while securing items from their lockers, often shared with one or two additional students. (142)

- Due to the school not providing for students' privacy needs, social development may suffer. Many students when at home are unable to find the privacy that they need. When they arrive at school, they may find it difficult at times to continually adjust to others, causing fights. Often, disruptive students are taken out of the class and in to a classroom where similar students with similar behavior are placed until they can settle down and be returned to their class.(32)

Teacher Instructional Performance

Privacy concerns, in particular, concerns over acoustic and visual privacy in open space instructional areas, can have a significant affect on Teacher Instructional Performance.

- Teachers feel that they do not always get privacy in the open plan space, especially from other teachers and classes. For teachers, unlike students, opportunities for gaining some sense of privacy during the school day does exist. Some teachers mention the teachers lounge, others mention their own classrooms during lunch period, and one teacher identified the corridor outside her classroom has at times provided her with the momentary privacy she needed. (25, 142)

- Teachers have opportunities for privacy, such as the teachers' lounge, but they are not always used due to the lack of time allowed to get away from continuous daily activities. (142)

9. Sensory Stimulation

Sensory Stimulation refers to the degree to which occupants feel the school building provides a stimulating environment for learning that is safe yet challenging.

Issues and Concerns Raised

Sixty-seven percent of teachers responding to the survey indicated they experience some concerns over sensory stimulation either on a daily (11%), weekly (30%), or monthly (19%) basis.

The following is a list of sensory stimulation issues identified.

- the condition of the existing playground is not seen as providing the appropriate level of sensory stimulation for students. (25, 31, 32, 138, 142)

- student work displays are believed to provide a positively stimulating environment for students. (25, 31, 32, 138, 142)

- the lack of views out windows limits opportunities for sensory stimulation of natural daylight and knowledge of outdoor conditions. (25, 31, 32, 138, 142)

- the sterileness of double loaded corridors (i.e., high walls and ceilings, smooth surfaces, and wide corridors), despite colorful and exciting student work displays, contributes to a sense of low sensory stimulation. (31, 32)

Survey Findings

Despite 67% of teachers expressing concerns over sensory stimulation, the working groups of four of five schools feel they have a good handle on providing the appropriate level of sensory stimulation for their students, and rate themselves high with regard to this quality.

Sixty-three percent of teachers feel they have complete to significant control over the sensory stimulation concerns at their school.

The overwhelming majority of teachers (85%) feel that the manner in which sensory stimulation concerns have been dealt with have been fair to somewhat fair, as well as very to somewhat helpful (77%) in providing an effective environment for teaching and learning.

Overall, teachers are very to somewhat pleased (81%) with respect to how sensory stimulation concerns have been addressed.

A majority of teachers feel that sensory stimulation is very important (59%) in supporting the goal of maintaining a safe, healthy and nurturing learning climate, and very important (61%) in supporting the goal of increasing Student Academic Performance.

Table: Survey Findings for Sensory Stimulation

	Daily	Weekly	Monthly	Yearly	Never
[1] How frequently are issues of SENSORY STIMULATION a concern at your school?	11%	30%	19%	7%	33%

	Fair	Somewhat Fair	Neutral	Somewhat Unfair	Unfair
[2] Do you feel that the concerns for SENSORY STIMULATION have been **fair or unfair to teachers and students?**	58%	27%	15%	0%	0%

	Complete Control	Significant Control	Some Control	Little Control	No Control
[3] To what degree do you feel you have **control** over SENSORY STIMULATION in your classroom and school overall?	30%	33%	33%	4%	0%

	Very Helpful	Somewhat Helpful	Neutral	Somewhat Hindering	Very Hindering
[4] Have SENSORY STIMULATION concerns **helped or hindered** the efforts of your school in providing a safe environment for learning?	44%	33%	22%	0%	0%

	Very Pleased	Somewhat Pleased	Neutral	Somewhat Disappointed	Very Disappointed
[5] Overall, how **pleased or disappointed** are you in the extent to which SENSORY STIMULATION concerns have been addressed at your school?	44%	37%	15%	4%	0%

	Very Important	Somewhat Important	Neutral	Somewhat Unimportant	Very Unimportant
[6] **How important** is SENSORY STIMULATION in supporting the goal of...					
(a) maintaining a safe, healthy and nurturing learning climate?	59%	37%	4%	0%	0%
(b) increasing student achievement?	61%	32%	7%	0%	0%

Links to Educational Outcomes and Goals

Student Academic Performance

Sensory Stimulation concerns, in particular, concerns over the quantity and quality of educational displays, can have an affect on Student Academic Performance.

- The quality of sensory stimulation through the use of educational displays on classroom and corridor walls is seen by teachers to support Student Academic Performance. (25, 31, 142)

Student Social Development

Sensory Stimulation concerns, in particular, concerns over displaying individual student work, can have an affect on Student Social Development.

- The quality of sensory stimulation within the walls of the school was understood by teachers to potentially influence social development through the display of individual student work. Often students will proudly show their work to others. (25, 31, 32, 138, 142)

- Playgrounds are not seen as providing the necessary sensory stimulation for students and may potentially influence social development. (31, 32, 138, 142)

Teacher Instructional Performance

Sensory Stimulation concerns, in particular, concerns for views out windows, can have an affect on Teacher Instructional Performance.

- Teachers mentioned the lack of views out windows as evidence of poor sensory stimulation that often affects their attitude and mood and potentially hinders their instructional performance. (31, 142)

- The quality of sensory stimulation as illustrated through well-planned educational wall displays could be seen as reinforcing a teacher's instruction. There are instances however, where some student work displays are perceived by a few teachers to be less effective in carrying an instructional message due to their chaotic organization and lack of theme. (142)

10. Crowding/spaciousness

Crowding/Spaciousness refers to the degree to which occupants feel the school building cannot adequately accommodate the number of students and teaching staff occupying it.

Issues and Concerns Raised

Sixty-nine percent of teachers responding to the survey indicated that they experience some concerns over crowding/spaciousness in their school.   Teachers experience crowding/ spaciousness concerns daily to weekly (34%), monthly (19%), and yearly (15%).

The following is a list of classroom adaptability issues identified.

- open instructional areas provide opportunities for learning centers and small group instruction. (25, 31, 138)

- the crowding of self-contained classrooms with tables is seen as a concern. (32)

- classes at all grade levels in open instructional areas are perceived as crowded.(142)

- crowded administrative area (142)

Survey Findings

Although 74% teachers feel they have little or no control over the crowding concerns at their school, and 44% of teachers feel that the manner in which crowding concerns have been dealt with have been somewhat hindering in providing an effective environment for teaching and learning, 59% feel the school administration has been fair to somewhat fair in addressing crowding concerns within their schools. Yet, overall, 44% of teachers indicated that they were somewhat to very pleased (44%) with how crowding/spaciousness concerns have been addressed.

A majority of teachers feel that crowding/spaciousness is very important (78%) in supporting the goal of maintaining a safe, healthy and nurturing learning climate, and very important (67%) in supporting the goal of increasing Student Academic Performance.

Table: Survey Findings for Crowding/Spaciousness

	Daily	Weekly	Monthly	Yearly	Never
[1] How frequently is CROWDING/ SPACIOUSNESS an issue at your school?	19%	15%	19%	15%	31%

	Fair	Somewhat Fair	Neutral	Somewhat Unfair	Unfair
[2] Do you feel that the manner in which CROWDING/SPACIOUSNESS concerns have been dealt with at your school have been fair or unfair to teachers and students?	26%	33%	22%	19%	0%

	Complete Control	Significant Control	Some Control	Little Control	No Control
[3] To what degree do you feel you have control over the CROWDING/ SPACIOUSNESS at the school?	0%	11%	15%	52%	22%

	Very Helpful	Somewhat Helpful	Neutral	Somewhat Hindering	Very Hindering
[4] Have CROWDING/ SPACIOUSNESS concerns you have identified above helped or hindered the efforts of your school to provide a safe environment for learning?	7%	15%	33%	44%	0%

	Very Pleased	Somewhat Pleased	Neutral	Somewhat Disappointed	Very Disappointed
[5] Overall, how pleased or disappointed are you in the extent to which CROWDING/ SPACIOUSNESS concerns have been addressed at your school?	11%	33%	26%	30%	0%

	Very Important	Somewhat Important	Neutral	Somewhat Unimportant	Very Unimportant
[6] How important is CROWDING/ SPACIOUSNESS in supporting the goal of...					
(a) maintaining a safe, healthy and nurturing learning climate?	78%	15%	7%	0%	0%
(b) increasing student achievement?	67%	26%	4%	4%	0%

Links to Educational Outcomes and Goals

Student Academic Performance

Crowding/Spaciousness concerns, in particular, concerns over overcrowded classrooms, can have a significant affect on Student Academic Performance.

- In classrooms perceived to be overcrowded, teachers feel Student Academic Performance suffers. Being in close quarters, students often feel their personal space is violated by other students resulting in fights and disruptions that interfere with their instructional learning. (32, 142)

Student Social Development

Crowding/Spaciousness concerns, in particular, concerns over overcrowded classrooms, can have a significant affect on Student Social Development.

- In classrooms perceived to be overcrowded, teachers feel Student Social Development suffers. Table-crowded self-contained classrooms add to the perception of crowding. Some students spend the majority of their day in their self-contained classrooms at tables that do not provide enough room for them to work. Being in close quarters, students often feel their personal space is violated by other students, resulting in fights and arguments. (32, 142)

Teacher Instructional Performance

Several working groups are in agreement that Crowding/Spaciousness concerns, in particular, concerns over overcrowded classrooms, can have a significant affect on Teacher Instructional Performance.

- In classrooms perceived to be overcrowded, teachers feel their own instructional performance suffers. Being in close quarters, students often feel their personal space is violated by other students resulting in fights and disruptions that interfere with instructional time. One teacher remarked that her role was that of crowd controller, not teacher. (142)

APPENDIX B: ENVIRONMENTAL QUALITY CONCERNS

A comprehensive list of environmental
quality concerns ranked by priority

APPENDIX B1
Dr. Rayner Browne Elementary School #25
Environmental Quality Issues Ranked by Priority

Issue No.	Issue Title	Issue Description

High Priority Issues

1.	Poor Outdoor Lighting	Outdoor lighting is poor, especially during evening events such as PTO meetings in the winter months. Lighting is poorest along the north side of the building where teachers walk to the parking lot. In addition, there is no lighting on the east side or south side at all.
2.	Poor Air Quality	There are problems with dry air, poor air flow and ventilation experienced by many teachers in the school. Some teachers are aware that air borne bacteria could infect students and teachers. Some teachers have complained of irritated red and itchy eyes and aggravated allergies.
3.	Playground Safety	Although custodians do an excellent job of cleaning up the grounds, glass and needles are still found in the grass and on the playground by students. The problem is ever present. The basketball hoop and the remains of the monkey bars were recently removed to discourage use of the grounds.
4	Concern over Neighborhood Quality	The overall neighborhood quality exerts an overall negative affect on all activities within and around the school. Teachers fear for student safety, and several drug related incidents in the surrounding neighborhood during school hours have reminded them of the need to be vigilant. Crime has seemingly gotten worse around the school -- there are more shootings and strangers are found walking through the parking lot and around the school entrance during the day. Teacher concerns over neighborhood quality are associated with the problems and frustrations they see children bringing into the school.
5	Lack of Adequate Cafeteria Storage	There is a lack of space for storing cafeteria supplies and food. Recently, some storage has been shared with the custodial staff.

Moderate Priority Issues

6.	Noise in Pods	Pod (open plan) teachers regularly complain of noise from other classes. Some classes are required to move past those classes nearest the corridor to get to their instructional areas, thereby disturbing activities. Talking over other pods escalates the noise problem. It was recognized that this is as much a classroom management issue as it is an environmental quality issue.
7.	Lighting in Pods	Lighting in the pods is satisfactory, but could be better. The pods are not always as bright as other areas in the building such as self-contained workrooms and the main office. Lighting on the second floor seems to be too high and diffuse. The opportunities for supplementing artificial lighting with natural daylighting is limited due to the frosted Plexiglas windows and further reduced by the need for curtains on the first floor windows to discourage potential intruders from looking in and inventorying equipment in instructional areas.
8.	Open Plan versus Self-Contained	Teachers feel that in open plan instructional areas it is hard to manage student behavior due to noise and distractions from other classes. Sometimes more time is devoted to discipline and classroom management than teaching and learning. This is a source of frustration for many teachers. Special education students seem to be most affected by these distractions.

Low Priority Issues

9.	Additional Storage Space Options	Some teachers felt that cabinets under sinks and against walls are not enough for the entire pod. Shared storage space is unorganized and over-packed with various materials and books that have not been used in years. Most teachers felt that the problem could be resolved by carefully organizing shared storage rooms.
10.	ADA Accessibility	There are currently no building codes or ADA regulations that would require the school to provide disabled accessibility unless a building experiences major renovation, addition or alteration. However, the issue of providing access is of concern to the school. The school has no means of vertical transportation for the disabled, nor does it provide any appropriate bathroom stalls.

APPENDIX B2
Coldstream Park Elementary School #31
Environmental Quality Issues Ranked by Priority

Issue No.	Issue Title	Issue Description

High Priority Issues

1. **Multiple Points of Entry**

Although multiple points of entry have a positive impact on reducing bottlenecks at the main entry and lobby, it also poses a security problem in that more entrances must be monitored for intruders. Most of the concern over intruders comes from teachers in the Kindercourt Wing where the entrance is often propped open due in part to people not completely closing the doors and also to improperly functioning door closers.

In addition, although the main entry has been unlocked and welcoming for visitors, recently a buzzer system had to be installed like many other schools in BCPS due to a series of recent daytime intruder incidents including one incident in which A/V equipment had been taken from a classroom.

2. **Unsafe Kindercourt Playground**

The Kindercourt playground has not been used other than for semi-annual cook-outs due to its perception by teachers as being an unsafe outdoor area. Playground equipment is broken, fencing has been damaged or stolen, there is a lack of direct visibility of the playground from within the school, and drug paraphernalia and broken glass is found routinely by custodians in both the playground area and the surrounding grass play areas.

3. **Parking Lot Safety**

Parking lot safety is a continuing concern for teachers. Staff cars are regularly broken into. The existing camera is not functioning and a lack of adequate lighting exists on both sides of the building.

4. **Cross Traffic Safety Issue**

Parents and visitors attempt to park along and drive fast through the drive access in front of the building entrances, causing potential cross traffic safety problems with exiting students. The problem has been resolved temporarily during final dismissal through the use of student crossing guards and orange cone markers, but parents still routinely disregard these signs, increasing the potential for accidents.

5	Old Carpeting	The carpeting in most classrooms is over a decade or more old, is lifting up in spots, shows a multitude of stains, and even after cleaning often emits odors. Carpeting is most critically a problem in the pre-kindergarten and kindergarten classrooms since most of the time is spent on the floor. Children often get sick on the floor and the carpeting needs to be cleaned much more often than in upper grade levels.
6	Thermal Control	There are different degrees of control teachers experience with respect to thermal conditions in their classrooms. Some teachers have the ability to control their univents, while a number of teachers do not. Operable window provide some local control of thermal conditions, albeit inefficient.
7	Emergency Lighting	There is a lack of emergency lights in stairwells.

Moderate Priority Issues

8.	Upkeep of Grounds	The upkeep of grounds has been a reoccurring issue for the school: the grass is not regularly mowed, and garbage collects along the fence lines of the school property. The responsibility for the grounds upkeep belongs to Baltimore City, and is not contractually a school task. In the desire to maintain the grounds at a minimum level of quality, the school custodian has unofficially assumed this task.
9.	Teachers' Lounge	The teachers' lounge could be more inviting and currently is not the kind of place teachers can go to relax or unwind. The couch wood frame is damaged and in need of repair, they need additional seating and table furniture, and the room needs to be better cleaned, organized and managed.
10.	ADA Accessibility	There are currently no building codes or ADA regulations that would require the school to provide ADA accessibility unless a building experiences major renovation, addition or alteration. However, the issue of providing access is of concern to the school. The school has no means of vertical transportation for the disabled, nor does it provide any ADA bathroom stalls.

Low Priority Issues

11.   Cafeteria/   The divider partition between the cafeteria and the
      Auditorium Divider   auditorium is in functional disrepair and is in need of
      Partition   replacement.

12.   Need for Additional   Some teachers felt that there were not enough electrical
      Electrical Outlets   outlets (currently three to a room) and special outlets in
                                anticipation of special equipment and computers to make
                                the classroom adaptable (recently twelve computers were
                                donated for classroom use). A cable wiring project started
                                and stopped without being completed.

APPENDIX B3
Mildred Monroe Elementary School #32
Environmental Quality Issues Ranked by Priority

Issue No.	Issue Title	Issue Description

High Priority Issues

1.	"It's Too Hot!"	Within the school building it can be very hot and humid from late April to early May continuing until school ends in June. Often it can also be hot into the month of September. Students do not seem as affected as adults; they adapt, but at what cost? During test taking periods at the end of the year some classes are moved to more comfortable rooms.
2.	Urban Services Dumpster	The Urban Services dumpster and the landscaping adjacent to the school parking lot presents both an appearance and a health and safety issue. Children regularly play on old bed mattresses, chairs, and other large items left there by neighborhood residents. The school has had only minimal success dealing with several city agencies to get the trash removed. School custodians have responded by voluntarily removing larger items from around the Urban Services Dumpster, but this is only a short-term solution to a long-term problem.
3.	City Alley	For several years, a large mound of heaved pavement at the north end of the city alley has made it difficult and unsafe to access the school parking lot. The alley is in desperate need of repaving. In the meantime, teachers have adapted by entering the site from the south which is intended as a exit not an entrance to the parking lot.
4	Playground Safety	The existing playground is a liability issue for the school. Glass, condoms and other items are regularly found on the playground. Play equipment is old and damaged, while some of the equipment has been vandalized or stolen. As a result of the lack of playground equipment and space, for example, children often use the paved hillside on Urban Services property to slide down trays in the winter. Minor accidents have occurred in the past, but the school is concern that something more serious could happen. Replacement of damaged or missing equipment has not been possible.
5	Child Safety & Vehicular Traffic	There is an overlapping of functions on the site between the parking lot and playground area. Service vehicles and other visitors routinely cross traffic in the playground with children playing. Although there has never been an incident, there is a concern that there is the potential for accidents.

6	Classroom Tables	Tables, provided as a component of the previous educational program, are felt to take up valuable space in the self-contained classrooms. It was felt that six tables do not give teachers as many configuration options as the 28 desks. With the tables there are no places for students to put books and therefore they are stacked on tables, limiting the effective use of the working surfaces. In addition, there is very little elbow room when eight students are sharing a table designed for six, especially with older students.
7	Lack of Personal Space for Students	Students do not always get the personal space they need, and as a result, several fights occur each week. Students have few options for personalizing their space. They have no desk to call their own, in many cases they share lockers with other students, and materials and supplies are stored in shoe boxes and placed in the corner of the room.
8	A "Quality Zero" Carpet	Rugs were given to all classroom teachers as part of the Tesseract program. One teacher, however, did not receive a rug, and was left with an old one that is difficult to clean. Students of this teacher spend many hours of their day on this carpet and therefore the need to replace it was seen as a high priority.

Moderate Priority Issues

9.	Reoccurring Insect Problem	Although the insect problem has been addressed by the school it is still a reoccurring problem. Steps have been taken to resolve it.
10.	Locked Storage for Teachers' Personal Belongings	Not all teachers have keys to lock personal belongings in closets, nor do all teachers have keys to their classrooms. As a result, they have a sense of a lack of control in securing their belongings.
11.	Wall Hanging Problems	Due to the often high humidity in the building it can be difficult to secure wall hangings to painted concrete block walls. The desire for a tackable linear cork strip surface was discussed to resolve this problem.
12.	Developing Relationship with Custodian	Although several custodians respond quickly to requests, a few in the recent past have not. Counters are not washed. The work is not always seen as consistent. Teachers felt that there was too much turnover of employees at the school in the past few years. One teacher acknowledges that perhaps in the past, the teachers have not been specific in stating their needs.

Low Priority Issues

13. Acoustic and Noise Problems in Bathrooms and Corridors

The noise in the bathrooms on both the first and second floors was seen as being louder that normal. Teachers have acknowledged that the noise is not all the students' fault. It is suspected that the noise problem is partly a result of the reverberations of students' voices against the hard surfaces in the building in general. Acoustical treatment in the bathrooms and hallways poor (tile, concrete and metal lockers).

14. Acoustic and Noise Problems in Classrooms

Classrooms can be loud at times. Acoustical treatment in classrooms, similar to hallways and bathrooms, is poor: walls as well as ceilings are constructed of painted concrete block, while floors are tile with a small amount of carpeting. This issue was seen to be more easily addressed as a classroom management issue.

15. Street Noise

The city sidewalk and street are close to all east classrooms. People can be heard outside causing some distractions for teachers and students. Playground noise can also be a problem for some, but not all classes. It was agreed that street noise is not something the teachers have much control over, and many schools have problems with street noise.

16. Unsightly Windows

The existing shatter proof frosted Plexiglas windows are very unsightly. Occupants cannot see through them and get only minimal diffuse natural daylighting. Due to the metal bar cages on the first floor, the opportunity to open windows for ventilation in the hot and humid months is eliminated, causing much discomfort for both teachers and students.

17. Unused Teachers' Lounge

The teachers' lounge is not used due primarily to its remoteness to classrooms, unappealing appearance as well as simply having a lack of adequate time for lunch. Currently, teachers eat their lunches in the air conditioned computer room or in their own rooms. It has been acknowledged by the administration that the teachers' lounge is in need of some renovation and possibly relocation, and steps are underway to improve these conditions for teachers.

18. Stair Safety

The north stairwell is open to below and is seen as a bad design with respect to safety. There have been no major accidents, but the north stairwell has an open drop which could be unsafe for children. The staff has to watch that children do not fall.

19.	Threat of Intruders	A door buzzer and mirror help with security and incidents have dropped off in the past year, but often intruders still get by. Parents do not always stop in the office to receive passes since they feel they have special rights. Sometimes students may open doors for people. As a result, the school often experiences unknown people wandering the building. In many cases, intruders are known by individuals in the school.
20.	Problems with Computer Installation	In a few classrooms, computers were installed in such a way as to block valuable bulletin board space. Computers could be placed back to back instead of along the wall.
21.	Difficulty in Conducting Interclass Projects	The building design does not allow for as much team teaching as the principal would like. However, the structure of building that would allow for team teaching might not be the structure that most teachers would be comfortable teaching [open plan]. Team teaching is not a high educational priority of this school.
22.	Cooperative Learning in Self-Contained Classrooms	In self-contained classrooms, there is often no room for "activity centers" and true cooperative learning. One teacher remarked that the school was built for row and column classrooms, not cooperative learning.
23.	Handicapped Accessibility	There are currently no building codes or ADA regulations that would require the school to provide handicapped accessibility unless a building experiences major renovation, addition or alteration. However, the issue of providing access is of concern to the school. The school has no means of vertical transportation for the disabled, nor does it provide any ADA bathroom stalls.

APPENDIX B4
Harriet Tubman Elementary School #138
Environmental Quality Issues Ranked by Priority

No.	Issue Title	Issue Description

High Priority Issues

No.	Issue Title	Issue Description
1.	Dissatisfaction with Open Space	Open space promotes collegiality among teachers, but noise and distraction continue even with some new portable bulletin boards. There is no wall space so teachers must hang posters from the ceiling, there is also inadequate chalkboard space, and no locked cabinet storage in the classroom for instructional materials or personal belongings.
2.	Inefficient Self-contained Classroom	One self-contained kindergarten classroom on the first floor has a platform in the room that makes layouts awkward: the sink is too high for children to use, there is no room for a dedicated gathering space, and the space on the steps is wasted space and used for storage.
3.	Congested Stair/Main Lobby	There is often congestion as students enter the main lobby stair during the morning and at dismissal. A single-leafed door that leads out from the stair contributes to this problem at dismissal. This congestion could be a problem if a fire occurred. Lighting may be insufficient in the stair tower.
4	Lack of Adequate Playground Equipment	The school does not have adequate playground equipment. Teachers feel that aging monkey bars and one basketball court do not constitute a true playground.
5	Lack of Adequate Tot Lot Area	One teacher explains that she has no tot lot to take her students out to, so she uses the sidewalk on the south side of the building and moves a sandbox outside in warmer weather.
6	Upkeep of Grounds	All occupants in the school are aware of the state of the exterior ground of the school: glass, uncut grass, damaged fencing, peeling paint on of stair towers, graffiti, slow trash pick-up, lack of neighborhood ownership and playground equipment were the main issues mentioned.
7	Psychological Safety While on Building Grounds	Everyone feels safe in the school, but some do not feel safe outside due to open-air drug dealing, misuse of school grounds by adults in the evening, and car thefts.
8	Too Hot, Too Cold	Parts of the building have continual problems with heating in the winter, while other parts of the building suffer from being too cold in the spring and fall months. Teachers have limited perceived control over temperature fluctuations.

Moderate Priority Issues

9.   Non-use of No use of computers on the second floor computer areas
      Computer Nooks   were observed on either side of the building.

10.   Bathroom   Ventilation in the bathroom not operating/ working as they
      Ventilation   should; fan motors were not operating, although a work
                           order had been placed.

Low Priority Issues

11.   Inefficient Use of Space utilization is poor on the second floor in one open
      Open Space   space instructional area, caused by the loss of a teacher
                          position due to a change in enrollment. The issue was
                          raised to how might left over space be shared among other
                          teachers in the Pod.

12.   ADA Accessibility   Existing bathrooms do not meet ADA handicapped
                           accessibility code (Note: There are no state of federal
                           regulations requiring ADA compliance in older existing
                           buildings unless there is major structural change)

APPENDIX B5
Robert Coleman Elementary School #142
Environmental Quality Issues Ranked by Priority

Issue No.	Issue Title	Issue Description

High Priority Issues

1. Playground Unsafe — The play equipment is very unsafe although there has never been any major accident. There is no facility for younger children to do gross motor activity. The school is writing a federal grant to raise funds to construct a more appropriate playground.

2. Overcrowded classrooms — Classrooms are overcrowded from 32 to as many as 47 students in a single class. As a result, there is no room to set up learning centers. More class time is devoted to behavior modification than learning.

3. Too Cold! — Currently, the air conditioning system is much better regulated than in the past, however, some rooms are still much colder than others. Cutting down air in one pod area has the unintended effect of shutting air down in other parts of the building.

4. Air Quality — Windows do not open by design and therefore teachers and students cannot get fresh air they want. The existing air quality in the enclosed space is not satisfactory to most teachers. The school administration is not sure about the quality of the air, it has never been tested.

5. Inadequate Lobby Design — The lobby area, not being large enough to accommodate the traffic, becomes a bottleneck at several periods during the day. In addition, there is not enough lighting in the lobby due to incandescent light fixtures and dark unreflective surfaces.

6. Underutilized Library/Media Center — The library/media center has come under disuse due to the lack of funding for a librarian position and books. The space on the second floor has become an informal instructional space, and is vacant most of the time. Computers are inoperative, books are outdated and in disarray. The school has considered plans to rearrange the instructional space on the second floor to take advantage of this space.

7. Lack of Adequate Bathroom Ventilation — The custodians are very responsible in keeping the bathrooms satisfactorily clean, however odors in the bathroom are a constant problem due primarily to a lack of ventilation. This problem exists for all bathrooms in the building.

8. Computer Problems   A third of the computers in the building do not function properly. No one staff member has been assigned the responsibility of maintaining them, nor does anyone have the knowledge to address computer related problems.

9. Problems with Parents Finding Way   Parents tend to get confused when they come up the stairs to the second floor when looking for their child's classroom. Much of this problem stems from the way in which they are directed by staff, however, the confusing layout only adds to the problem.

10. Storage Unorganized   Teachers feel that they have adequate storage, it is just not properly organized or managed as it could be. As a result, it is hard to do an inventory of books and supplies, and there is no room for additional storage needs. Books and supplies stored in open instructional areas are routinely stolen or misplaced.

11. Safety in the Parking Lot   Many teachers do not feel safe in the parking lot after school hours. Cameras were installed as part of an effort to make the parking more secure, but the cameras are not often monitored as expected. As a result, staff cars are still being broken into on a regular basis.

12. Ventilation for Science Projects   Some teachers are precluded from conducting science projects due to a lack of ventilation to the outside.

13. Open Space versus Self-Contained   Most teachers are using traditional educational styles of teaching appropriate in self-contained classrooms, not the styles appropriate for open space school such as team teaching, group work, and planning together. The disordered open plan configuration of the school has contributed to endless distractions from other classes and from constant traffic flow, as well as problems of privacy. The arrangement of instructional areas has been compromised further by a number of column obstructions that severely limit classroom adaptability.

14. Safety from Intruders   Custodians monitor doors periodically, but still there are problems. Teachers do not bring personal items to school for fear of theft, and visitors do not always get a pass from the office or sign the log book: Some intruders still get through the cracks.

15. Visibility & Surveillance   Teachers cannot always see children in stairwells near exists.

16. Vision of One Stop Shop Interagency Approach   The desire for further structural changes follows closely with the vision of a one-stop shop interagency facility that provides a variety of community services.

17. First   Floor There is a desire on the part of teachers to capture existing
     Instructional   Area space between the pods in order to increase the workable
     Layout   open instructional space.

18. Crowded   Due to the influx of new functions, the administrative area
     Administrative Area   has become overcrowded, the waiting room is inadequate
                            for the amount of traffic, the principal has moved into the
                            conference room, and other rooms have been taken over by
                            administrative computer systems.

Moderate Priority Issues

19. Landscaping   Landscaping is minimal on the school site. Teachers
     Projects   suggested that students could get involved in planting trees
                            as a science project to provide a sense of ownership in the
                            school. A similar project, a garden, was attempted before
                            with some positive results.

20. Sharing Lockers   Students are forced to share lockers which reduces their
                            sense of privacy over personal belongings, although it
                            encourages then to learn to share. As a result, many things
                            are stolen or lost such as coats, bags, books, and tennis
                            shoes among other items.

21. No   Views   out   Windows were designed to be shatter proof, but, due to
     Windows   the frosted quality of the Plexiglas material, provide no
                            views to the outdoors. Most windows cannot be opened
                            for reasons of security, thus limiting the use of windows
                            for fresh air. Windows deliver very little natural
                            daylighting to the classroom spaces.

22. Signs of Academic   Although some signage is present, the demarcation
     Unity   between academies is not entirely clear. Suggestions
                            included different color schemes, and more elaborate signs
                            of entry into an academy.

23. Student Work   Improvements could be made in the student work displays.
     Displays   Some rooms are more chaotic and disorganized than
                            others. More coordination is needed between decor and
                            themes within and between academies.

24. ADA Accessibility   There are currently no building codes or ADA regulations
                            that would require the school to provide ADA accessibility
                            unless a building experiences major renovation, addition or
                            alteration.

25. Plumbing   &   Plumbing has on several occasions backed-up and flooded
     Flooding   the hallways during severe storms. The question of
                            responsibility was raised as to whether it is the city's
                            backed-up drains or the school's older supply lines?

Low Priority Issues

26. Non-use of
     Teachers' Lounge

The teachers' lounge is not used by teachers. The lounge is used for periodically working with disabled children and functions as an informal day-care center in the afternoon.

27. School-wide
     Assemblies

There is a low priority need for a larger auditorium space for school-wide assemblies.

APPENDIX C: PROCEDURE FOR ENVIRONMENTAL QUALITY ASSESSMENT

Procedure for Environmental Quality Assessment

The following procedure outline provides an overview of the entire research process followed for this project. Included in this outline are the objectives each step is intended to accomplish and the resources and participants necessary to meet these objectives. For this procedure to be adopted by an individual school, Item 1-3 would not be necessary. In addition, the degree of involvement depends on the level of commitment of the school community in participating.

Data Gathering/ Analysis Phase	*Objective*	*Resources/Participants*
1. CASE STUDY SELECTION PROCESS		
1-1. Planning Meeting #1 (Entry)	To establish initial contact meeting w/ district personnel to provide a more detailed description of the process of environmental quality assessment.	District Administration Staff
1-2. Planning Meeting #2 (Entry)	To receive approval to proceed with research process.	District Administration Staff
1-3. Case Study Selection Process	Identify comparably matched schools for the study.	District Administration Staff
1-4. Securing the Site (Negotiating scope & schedule)	Introduce the need for environmental quality assessment and indicate the resources required to complete the assessment. Negotiate scope & schedule. Receive approval to proceed with project at each participating site.	Principals of selected cases
2. BASELINE DATA COLLECTION PROCESS		
2-1. Physical Facilities Inventory	To gather preliminary data on school facility to establish a baseline of objective physical data.	8-12 hours of data collection per school after school hours.
2-2. Organizational Survey	To gather preliminary data on school organization to establish a baseline.	
3. ISSUES IDENTIFICATION PROCESS		
3-1. Interviews w/ Non-Instructional Staff	To clarify and expand upon baseline physical environment data	1 or 2 - 30 min. interviews w/ custodial management and staff
3-2. Interviews w/ Principal	To clarify and expand upon the curricular and instructional goals of the school	1 - 45 minute interview/ school
3-3. Interviews w/ teachers	To gather data on teacher perceptions of the environmental quality of their classrooms and other places within the school.	4- 45 minute interviews/ school

3. ISSUES IDENTIFICATION PROCESS (cont'd)

3-5. Student Survey Questionnaire	To gain an understanding of the student's perspective.	In-class 2-3 item questionnaire children (Grade Levels 4 and 5)
3-6. Parent Survey Questionnaire	To gain an understanding of the parent's perspective.	Mail-in 5 item questionnaire to parents
3-7. Participant Observation	To document observations and impressions of the school	Recorded impressions of researcher during site visits

4. ISSUES PRIORITIZATION PROCESS

4-1. Group Workshop #1	To clarify and prioritize environmental quality issues and concerns and establish criteria assessment.	1.5 hour workshop w/ 4-6 teachers, staff and/or parent volunteers/ school who would constitute the environmental assessment working group

5. ASSESSMENT

5-1. Survey Questionnaire	Assess the perceptions of all teachers concerning environmental quality in their school.	Take-home 60-70 item questionnaire
5-2. Group Workshop #2	To interpret and clarify results of the teacher survey questionnaire and allow for a forum to discuss possible recommendations to address problems, issues and concerns.	1.5 hour workshop w/ environmental assessment working group
5-3. Report Write-up	To report to the community the results of the assessment.	Present to School Improvement Team

6. APPLICATION/ IMPLEMENTATION

6-1. Workshop #3	Identification of processes/ procedures and solutions	1.5 hour workshop w/ environmental assessment working group
6-2. Final Case Report	An internal report for district personnel review	Present to School Improvement Team

Case Study Selection Process & Criteria for School Selection

The research process begins at the School District Headquarters. Sites to be chosen for assessment must be selected according to a series of criteria that serve the goals and objectives of the assessment. Sites chosen must then be informed and principals, administrative personnel and site improvement teams or other administrative committees must be included in the research process. These administrative groups assign an environmental assessment working group to discuss objectives of the assessment. This section will provide an outline for establishing a set of objectives for the assessment project.

Establishing assessment objectives
The choice of buildings to be assessed should follow a certain set of objectives. These objectives should be clearly stated in order to provide a clear direction to the assessment work.

- Identify the facility(s) to be assessed

- Why are these) particular buildings or facilities being selected for assessment?

- What are the stated objectives of the assessment?

    Objectives might include a narrow assessment of particular environmental quality goals such as indoor air quality, asbestos abatement, productivity, energy cost effectiveness, or performance. An assessment could be used to measure the performance of facility management services in relationship to occupant goals, or include a broader assessment of the total environmental quality of a place according to a broader set of goals of society, organization or individuals. The objective of the assessment may be still more global: to develop measurable benchmarks for comparison to other schools over time.

Determining level of analyses
This step requires the assessment team to determine the level of analyses appropriate or required. This can be done by investigating the existing correspondence, or fit between philosophy, goals and instructional strategies, and the building and places within the building designed to support those philosophy, goals and instructional strategies. A lack of correspondence, or fit may indicate a mismatch and suggests the need for assessment at the particular level of analysis: at the philosophical level, goals level, or the level of instructional strategies. This step constitutes a preliminary test of where key problems may arise in the building assessment.

- Is there correspondence between organizational philosophy, goals and instructional strategies relevant to the building?

    In other words, is the espoused philosophy for a particular organization manifesting itself through the goals and instructional strategies within the building? An example might be that a school espousing a middle school philosophy (team teaching, houses) is operating as a junior high school (departmentalized, autonomous classrooms)

- Is there correspondence between goals and the facility which serves these goals?

    Referring back to the middle school operating as a junior high, the following example illustrates a lack of correspondence between organizational goals and the facility: a middle school program (which requires clusters of classrooms off a main corridor in order to support team teaching and the concept of 'houses') being implemented in a school building originally designed as a double loaded corridor.

- Is there correspondence between instructional strategies and the places they are contained in?

    An example might be the perceived inflexibility of a self-contained classroom toward cooperative grouping within the space.

Physical Facilities Inventory

The purpose of baseline data collection is to gather preliminary data on school facility and document that data in a database format that can allow for quick retrieval. The data will provide the basis for generating questions for the next phase of the research process.

School Identification

Name of School _____

Address _____

Telephone Number _____

Contact Person _____

General Building Information

Size of Facility GSF: _____ No. of Floors: _____ GSF/Floor: _____

Age of Facility Date Built: _____ Current Date: _____ Facility Age: _____

Collected Following? Floor/site plans? Y / N   Photographs of site/bldg. exterior Y / N

Photographs of bldg. interior Y / N

Functional Spaces/Rooms/Areas

Functional Space Description

	Total SF	Storage Room	Instruct-ional Area	Teacher Workspace	Room Finishes
Instructional					
General Classrooms					
Computer Classroom					
Library/Media Center					
Cafeteria					
Auditorium					
Gym/Multi-purpose					
Office Administration					
Principal's Office					
Administrative Offices					
Storage					
Public Support Spaces					
Toilets					
Hallways/Corridors					
Main Entrance Hall					
Other					
School Grounds					
Parking					
Playground					
Entrance Areas					
Play fields					
Other					

Physical Facilities Inventory
(Continued)

Technical Systems Specifications (Description)

Building System	System Type	System Description	Condition
Mechanical Heating			
Electrical			
Plumbing			
Lighting			
Security			
Structural			
Roof			
Exterior Wall			
Other			

Organizational Survey

The purpose of the baseline data collection is to gather preliminary data on the school organization. The data will provide the basis for generating questions for the next phase of the research process.

General Information

    School Name

    Address

    Principal of School

Program Description

    Official Mission Statement of School

    Description of Educational Program
        (Curriculum & Instruction, Programs offered, etc.)

    Master Schedules/ Class Schedules for each grade

Demographics

    Instructional Staff
        Students (by grade)
        Teachers
        Teacher Aides
        Administrative Staff

    Non-Instructional Staff
        Administrative Staff
        Custodial Staff
        Food Services
        Transportation Services

Educational Outcomes
    (To be collected as required by the objectives of assessment)

    Achievement Records (Math/Verbal)

    Attendance Records

    Vandalism Records

    Observed Student & Teacher Behaviors

    Student and Teacher Attitudes

    Others

Research Questions
Interview Guide for Principals

Information gathered from a previous step on mission and organizational goals will provide the substantive issues for asking questions of principals. The purpose of these interviews will be to clarify and verify educational goals of the school. In addition, principals will be asked to provide their perception of student, teacher and parent attitudes with respect to various environmental quality issues; and to express their own attitudes of these issues as well.

Thank you for agreeing to meet with me today, and thank you also for allowing us to conduct this study of environmental quality at your school. I'm going to ask you some open-ended questions about the types of issues, problems and concerns you run up against on a day-to-day basis while managing your school. Your comments will be kept confidential. By sharing your experiences with me, you will help us understand how well the school facility meets the needs of students, teachers, parents and the community-at-large.

I'd like to ask your permission to tape record our interview. The tape will not be shared with anyone outside of the research group and comments taken from the tape will be paraphrased and confidential. The tape will help us be more accurate in representing your views later on in the research process. Do I have your permission? May I begin?

0. Background questions

I'd like to start with a personal question:

How long have you been principal at Jones Elementary School?
What formative administrative experiences do you bring to this school from other schools you have worked in?

I have a few general organizational questions:

What is the projected enrollment for this year?
How many teachers to you have on staff?
What is a typical class size? is there a range?

I would like to ask you some general questions about your school's educational mission:

Could you describe the specific mission and focus of your school?

In general terms, what educational philosophy do you follow or promote here?
    prompts: team teaching, parental involvement, cooperative learning, discovery learning, etc.

How much agreement do you have on philosophy with the teaching staff as a whole?

Do you have any explicit set of achievement and developmental goals for the school?

To what extent do you feel your school has been successful in meeting these goals?

1. THE NATURE OF ENVIRONMENTAL QUALITY

Environmental quality -- or the quality of the physical environment of the school -- is one of the many factors affecting the educational process and a factor that is often overlooked.

Our study looks at the nature of environmental quality in the physical indoor and surrounding school setting.

Local knowledge
(1b) How do occupants[17] perceive, if at all, the nature of environmental quality in general?

We know how to define environmental quality in a forest, a factory, an office, a home, but what is it in a school? I am interested in what environmental quality means to you.

Could you describe for me what your definition of environmental quality might be?

> Prompts:
> What are some attributes that you think make for an exceptional school environment?
>
> What are some attributes that you think make for a good or bad physical setting for children or teachers?
>
> Probes:
> Could you give me a few incidents or situations to illustrate what you mean?

(1c) How do occupants perceive, if at all, the state of environmental quality in their specific school?

Using your concept of environmental quality, how would you rate the environmental quality of your school?

> Prompt: How does your school perform with respect to the aspects or attributes of quality you have identified in your definition?

Many of the aspects of environmental quality you have brought up are also mentioned in the research literature. There are a few more aspects I'd like to get your opinion on....

I will describe an attribute of environmental quality and I'd like to get your reaction to it.

Is this an appropriate or important factor to you? and why you think so?

If you have any questions as to the meaning of the terms, let me know and I can clarify.

Criteria for Environmental Quality

With each of the 14 attributes, the following general questions should be asked with regard to specific situations or instances concerning an attribute. There are four criteria for determining the level or nature of environmental quality: helpfulness, dependability, fairness and satisfaction. These questions address the four criteria for establishing the level of environmental quality exhibited for a particular attribute.

Helpful/Hindrance
How did this situation help or hinder your efforts to teach children?

Dependable/Not-Dependable
How often has this situation arose?

Do you know of other teachers and/or classrooms who have experienced this similar problem?

How did you resolve this situation? were you successful? if not, what would you recommend to resolve it?

---

[17]occupants = students, parents, teachers, administrative staff, custodial staff

Fair/Unfair
Do you think it is fair that you and your students had to endure this situation?

Satisfied/Not-Satisfied
How did you feel about that situation at the time? How do you feel about it now?

How satisfied are you with the outcome?

In your opinion, how important is this attribute? why?

Environmental Quality Attributes

1. Physical Safety and Security
The degree to which the physical environment of a place contributes to protecting occupants from harm, injury, or undue risk.

> What are some of the safety and security issues you have dealt with here?
> (unlawful entry, drugs, guns, other issues)
>
> Could you give me some examples (stories, incidents or situations) that can bring to life some of these issues for me?

2. Structural Flexibility
The degree to which the physical environment of a place can be easily changed to afford different activities.

> Has there been any situation in which there was a need to remove walls or change the configuration of the school layout to accommodate different activities? (renovations, alterations, modernizations)

3. Classroom Adaptability
The degree to which the physical environment in a place can afford many activities without restructuring.

> Have there been specific instances where you experienced problems using your classroom space effectively?
>
> (difficulties storing, retrieving, filing, or organizing student work or books and supplies? layout of your classroom furniture? floor materials? wall surfaces and display spaces? windows? group space, size)

4. Building Functionality
The degree to which the physical environment fits the organizational structure, behavior and processes with respect to size, configuration and adjacency.

> Does the layout of the building (e.g. number of floors, arrangement of rooms) fit the types of activities you and your colleagues are engaged in, or are you constantly adjusting your activities to fit the limitations of the size, configuration and location?
>
> Have there been situations where this has been an issue?

5. Places for Social Interaction & Communication (Social Places)
The degree to which a place provides opportunities for social exchange, communication and interaction.

> Is the school laid out in such a way to support informal social exchange among students and teachers and between teachers?
>
> Probes:
> How well does the teacher's lounge functions a place to interact with your fellow teachers?

Do corridors and common spaces offer places for interaction among teachers and students or are they simply passageways used to get from one place in the building to another?

Are corridors used, encouraged, discouraged as places for social interaction? why?

Have there been incidents or situations where social interaction has been an problem? too much, or too little?

6. Personalization & Ownership
The degree to which occupants perceive a place as offering opportunities to create a personal and self-expressive environment, and to mark it as the property of the individual.

How do you personalize your classroom?

What opportunities do children have to personalize their spaces?

Do you and other teachers have a sense of ownership of their school? Do children?

Can you give me some special examples of places in the building that have been personalized?

7. Privacy
The degree to which a place provides opportunities for a place of seclusion from others or observation; a place where one can be free from intrusion.

Do private places exist for teachers? where? are they adequate for their needs?

Do children have places for privacy? where? If children don't have private places to go why don't they -- what is the argument against children having private places to go to get away?

Have there been incidents or situations where privacy has been an issue for teachers or children?

8. History & Meaning
The degree to which occupants perceive a place as having historical and cultural references that create a sense of the familiar and provide a sense of meaning.

Does this school have a recognizable history? a collective memory? What is the story of this school?

9. Physical Comfort & Health
The degree to which occupants perceive a place as meeting their physiological needs with respect to thermal and air quality (thermal comfort), illumination (visual comfort) and noise (auditory comfort), odors (olfactory comfort), and surfaces (tactile comfort).

Is thermal and air quality something that is constantly an issue at your school?

Is noise and acoustics an issue or problem here at your school?

Is lighting an issue?

Have odors ever been an issue?

10. Psychological Safety
The degree to which occupants perceive a place as ensuring no harm, injury, or undue risk from the physical environment.

This attribute of EQ is slightly different from the previous attribute (safety and security). This attribute refers to *perceptions* of safety on the part of students and teachers despite school policies and actions.

From your perspective, how safe do your teachers and students feel in school?

Have there been incidents or situations where physical safety has been an issue?

11. Sensory Stimulation
The degree to which occupants perceive a place as providing a stimulating environment for learning that is safe yet challenging.

From your perspective, how stimulating are classrooms -- that is, how bright and cheerful are they? how creative or inspiring are they for children?

Can you provide any examples in your school of sensory stimulation and its importance to children's learning?

12. Crowding /Spaciousness
The degree to which occupants perceive a place as limiting opportunities for privacy, personal control or behavioral freedom.

Are classrooms crowded? what is the range of class sizes typically in your school?

Do teachers complain of crowded conditions or have they simply gotten use to it? How do they cope? Have there been incidents or situations where crowding has been an issue?

13. Legibility, Orientation & Wayfinding
The degree to which occupants perceive a place as fostering a sense of orientation within the environment that reduces confusion and facilitates wayfinding.

How easy is it to find your way around the building?

Can visitors easily find their way?

What strategies have you used to improve wayfinding through the building?

14. Aesthetics & Appearance
The degree to which occupants perceive a place as attractive and provoking.

What are your views concerning the appearance of the building interior? and exterior?

What specific aspects of the school do you pay attention to regarding appearance? (corridors, shiny floors, exterior landscaping, paint) and why?

Do you receive comments from visitors to the school concerning its appearance?

How often have you felt the need to voice your concerns about the appearance of the building?

From your experience, has the custodial staff been responsive to your needs and concerns?

Do you have any suggestions for the custodial staff concerning the upkeep of the building that you have not previously made them aware of?

Anything you want to add that I have not addressed?
Now I'd like you to reassess your building based on this expanded list of attributes of EQ .....

lc) How do occupants perceive, if at all, the state of environmental quality in their specific school?

How do you rate the environmental quality of your school considering the attributes you feel are the most important to teaching and learning?

How might you see improving those aspects of environmental quality your school has not performed well in?

2. FACILITY MANAGEMENT AND PERCEPTIONS OF QUALITY

We mentioned (or didn't mention) facility management as a factor in maintaining environmental quality. I'd like to ask a few questions with regard to your perceptions of facility management and its role in maintaining a quality environment to teach and learn in.

Local knowledge
(3b) What do occupants see as the aspects of facility management that may have an influence on the environmental quality of the school?

Generally speaking -- what ways do you think facility management (custodial and maintenance and operations services) can contribute to environmental quality in a school ?

Which attributes do you think facility managers can influence?

(3c) What do occupants see as the aspects of facility management that may be having an influence on the environmental quality in their specific school?

Given what you have said, in general terms, how well does your facility management team maintain the environmental quality in your school?

Prompts:
What have they done, or not done that pleases or satisfies you?

What have they done or not done that concerns you?

What suggestions can you offer to your facility management staff to improve their performance?

3. SUMMARY & NEXT STEPS

Thank you for your participation. Your responses will help us in assessing and improving the quality of the school environment here.

Take-Home Worksheet
I have a take home worksheet which I would like for you to fill out which asks you to rate the aspects of environmental quality.

Take-Home Worksheet

I would like to thank-you for taking the time to interview with me today. In an effort to extend our interview discussion of environmental quality in schools, I would greatly appreciate your responses to the questions on the following worksheet pages.

Please feel free to answer them at your leisure and send your responses to me by mail in the envelope provided with this worksheet.

As stated in the Informed Consent Form:

Participants will not be identified directly. All information gathered by participants will be confidential and used anonymously. Participation is completely voluntary and participants may withdraw from the study at any time for any reason without penalty. A decision not to participate will involve no penalty or loss of benefits to which the participant is otherwise entitled; if a subject withdraws, the information gathered from that participant will be used only with the written or verbal permission of that participant.

Again, thank-you for your participation in this project.

Jeff Lackney

Name of Participant   Date

1. Important Attributes of Environmental Quality

Please indicate the level of importance ([1]= very important, [2]= somewhat important, [3]= not important) of each of the following attributes of environmental quality with respect to its influence on...

Attribute of Environmental Quality	...Student academic performance			...Student social development			...Teacher instructional performance		
Physical Safety and Security	[1]	[2]	[3]	[1]	[2]	[3]	[1]	[2]	[3]
Structural Flexibility	[1]	[2]	[3]	[1]	[2]	[3]	[1]	[2]	[3]
Classroom Adaptability	[1]	[2]	[3]	[1]	[2]	[3]	[1]	[2]	[3]
Building Functionality	[1]	[2]	[3]	[1]	[2]	[3]	[1]	[2]	[3]
Social Interaction & Communication	[1]	[2]	[3]	[1]	[2]	[3]	[1]	[2]	[3]
Personalization & Ownership	[1]	[2]	[3]	[1]	[2]	[3]	[1]	[2]	[3]
Privacy	[1]	[2]	[3]	[1]	[2]	[3]	[1]	[2]	[3]
History & Meaning	[1]	[2]	[3]	[1]	[2]	[3]	[1]	[2]	[3]
Physical Comfort & Health	[1]	[2]	[3]	[1]	[2]	[3]	[1]	[2]	[3]
Psychological Safety	[1]	[2]	[3]	[1]	[2]	[3]	[1]	[2]	[3]
Sensory Stimulation	[1]	[2]	[3]	[1]	[2]	[3]	[1]	[2]	[3]
Crowding /Spaciousness	[1]	[2]	[3]	[1]	[2]	[3]	[1]	[2]	[3]
Legibility, Orient. & Wayfinding	[1]	[2]	[3]	[1]	[2]	[3]	[1]	[2]	[3]
Aesthetics & Appearance	[1]	[2]	[3]	[1]	[2]	[3]	[1]	[2]	[3]

2. Student Academic Performance

Which **three** attributes from the list on the previous page do you feel are **the most important** to **student academic performance?**

_____   _____   _____

Why did you choose the three attributes you did?

_____

_____

3. Social Development

Which **three** attributes from the list on the previous page do you feel are **the most important** to **student social development?**

_____   _____   _____

Why did you choose the three attributes you did?

_____

_____

4. Instructional Performance

Which **three** attributes from the list on the previous page do you feel are **the most important** to **teacher instructional performance?**

_____   _____   _____

Why did you choose the three attributes you did?

_____

_____

5. Facility Management

Please identify (with a check) the attributes of environmental quality that you feel your facility management team (a) **is presently addressing,** and (b) **ideally should, but is not presently addressing, and** why?

Attribute of Environmental Quality	(a) addressing	(b) not addressing	Why have you identified these particular attributes?
Physical Safety & Security			
Structural Flexibility			
Classroom Adaptability			
Building Functionality			
Social Interaction & Communication			
Personalization & Ownership			
Privacy			
History & Meaning			
Physical Comfort & Health			
Psychological Safety			
Sensory Stimulation			
Crowding /Spaciousness			
Legibility, Orient. & Wayfinding			
Aesthetics & Appearance			

6. Personal Control

Please identify (with a check) the attributes of environmental quality that you feel you (a) have adequate control over; and, (b) do not have adequate control over, and why?

Attribute of Environmental Quality	(a) Have control	(b) Do not have control	Why have you responded as you have?
Physical Safety & Security			
Structural Flexibility			
Classroom Adaptability	.		
Building Functionality			
Social Interaction & Communication			
Personalization & Ownership			
Privacy			
History & Meaning			
Physical Comfort & Health			
Psychological Safety			
Sensory Stimulation			
Crowding /Spaciousness			
Legibility, Orient. & Wayfinding			
Aesthetics & Appearance			

Informed Consent Form for Principals

I am Jeff Lackney, of the Department of Architecture and Urban Planning at the University of Wisconsin-Milwaukee. My colleague, Charles Brigden, and I are conducting a research project concerning how faculty, students and staff perceive the environmental quality of their schools. We would appreciate your participation in this study, as it will assist us in making recommendations for improving the environmental quality in your school and in other schools in the Baltimore City Public Schools (BCPS).

This research project will consist of a multi-site case study of five schools in BCPS. We will interview four teachers, an administrator, the head custodian, and parents from each school participating in the study. The interview will take approximately 45 minutes. In addition, we would like to survey students from each school using a short questionnaire survey to be administered by the school. Once the interview and survey process is complete, we will conduct one teacher's workshop consisting of four teachers from your school. This workshop will take approximately 90 minutes. Following the workshop and interviews, we may wish to conduct a short take-home questionnaire survey to be administered to the entire teaching staff to verify specific findings from the workshops, interviews, and student survey.

The four teachers willing to participate in this research project (as both interviewees and workshop participants) will be offered compensation of $75.00. Compensation will be awarded to teacher participants by mail with the conclusion of the final workshop or by February, 1996, which ever comes first. If a participant, for whatever reason, is unable to continue their involvement in the study, they will still be compensated in full.

Participants will not be identified directly. All information gathered by participants will be confidential and used anonymously. Participation is completely voluntary and participants may withdraw from the study at any time for any reason without penalty. A decision not to participate will involve no penalty or loss of benefits to which the participant is otherwise entitled; if a subject withdraws, the information gathered from that participant will be used only with the written or verbal permission of that participant.

Once the study is completed, we will be glad to give the results to you. In the meantime, if you have any questions, please ask us or contact:

Jeffery A. Lackney
School of Architecture and Urban Planning
University of Wisconsin-Milwaukee
Milwaukee, WI 53211
(414) 229-2591

If you have any complaints about your treatment as a participant in this study, please call or write:

Dr. Berri Forman, IRB
Institutional Review Board of the Protection of Human Subjects
Environmental Health, Safety and Risk Management
University of Wisconsin-Milwaukee
P.O. Box 413
Milwaukee, WI 53201
(414) 229-6016

Although Dr. Forman will ask you name, all complaints are kept in confidence.

I have received an explanation of the study and agree to participate. I understand that my participation in this study is strictly voluntary.

_____   _____

Name   Date

This research project has been approved by the University of Wisconsin-Milwaukee Institutional Review Board for the Protection of Human Subjects for a one year period.

Jeffery A. Lackney
Department of Architecture
School of Architecture & Urban Planning
P.O. Box 413
Milwaukee, WI 53201
7/15/95

Principal Name
School Address
Baltimore City Public Schools
Baltimore, Maryland Zip Code

Dear Principal,

The University of Wisconsin-Milwaukee (UWM) and the Department of Architecture with to express their appreciation to you and your organization for allowing Jeff Lackney, Assistant Director of the Institute for Environmental Quality in Architecture, to perform scholarly research on your premises.

The researcher will require access to data necessary to conduct research for a project entitled the Environmental Quality Assessment Research Project UWM IRB Protocol No. 96-02-031).

We understand that the contact person at your organization with whom the researcher is to communicate with in regard to such access is **NAME AND ADDRESS OF CONTACT PERSON HERE.**

The researcher has agreed and been instructed to protect confidentiality of data collected so that no subject will be individually identifiable. Finally, the researcher will share a copy of a final report with your organization upon request.

If any problems and/or concerns arise regarding this project, please notify the UWM complaint person (Dr. Berri Forman, Dept. of Environmental Health, Safety and Risk Management, P.O. Box 413, Milwaukee, WI 53201).

Please sign a copy of this letter to acknowledge receipt and your understanding of the scope of the researcher's proposed activity. Return it to Jeffery A. Lackney at the address listed above.

Thank you for your cooperation.

For: _____   For the Board of Regents of the
     Department   University of Wisconsin System
By: _____   University of Wisconsin-Milwaukee
     Authorized Signature

_____ Title
Authorized Signature

_____   _____
     Date   Title

For: _____   _____
     Participating Organization   Date
By: _____
     Authorized Signature

_____
     Title

_____
     Date

Research Questions
Interview Guide for Teachers

The purpose of these interviews is to gather preliminary information from the workshop participants concerning their attitudes and experiences with the school facility. The interviews will act as a way of introducing the researcher to the workshop participants in a non-threatening way. The types of questions asked at this stage will be based on previously raised issues concerning instructional and non-instructional organizational goals. Finally, questions will be phrased with respect to specific places in the school.

I thank you for agreeing to meet with me today. I'm going to ask you some open-ended questions about the types of issues, problems and concerns you run up against on a day-to-day basis while teaching in this building. Your comments will be kept confidential. By sharing your experiences with me, you will help us understand how well the school facility meets the needs of students, teachers, parents and the community-at-large.

I'd like to ask your permission to tape record our interview. The tape will not be shared with anyone outside of the research group and comments taken from the tape will be paraphrased and confidential. The tape will help us be more accurate in representing your views. Do I have your permission? May I begin?

(1) ACTIVITIES

I'd like to first ask you some questions about your roles, responsibilities and activities in the school:

(1.1) How long have you been a teacher here at Jones School?

(1.2) Could you describe for me your typical day at this school?
   (When do you arrive, what and where are the general activities are you engaged in during the day, when do you leave the building)

(1.3) Could you describe the typical instructional tasks you are engaged in during the school day?

(1.4) Are there any other school-wide activities you are periodically engaged in that you have not mentioned?

(2) PLACES FOR LEARNING & SOCIAL DEVELOPMENT

Now, I'd like to ask you some questions related to the places in this school.

When I refer to "places," I am referring to the various spaces, areas, rooms and even locations within the school not officially named. (i.e., lounges, meeting rooms, a stairway where people meet, classroom areas, etc.)

I am interested in how places support academic learning as well as social and developmental needs:

(2.1) First, in your opinion, what are the three or four most important places in the school with respect to supporting and nurturing **academic learning** in your students?
   (classroom, library/media center, cafeteria, gymnasium, auditorium, corridors, restrooms, playground, entrance area, activity pockets within classrooms, etc.)

   (a) why did you mention those particular places?

   (b) what makes these places important as places of learning?

   (c) What kinds of learning, in the broadest sense, are nurtured in these places?
      (kinesthetic, emotional, cognitive, artistic expression, interpersonal relationships, self-directedness, responsibility, analysis and problem solving, and questioning, inquiry and research)

(2.2) In your opinion, what are the three or four most important places in the school with respect to supporting and nurturing **social and developmental needs** of your students?

    (a) why did you mention those particular places?

    (b) what makes these places positive social places?

    (c) What kinds of social and developmental needs do you see being nurtured in these places?
        (communication skills, conflict resolution, interpersonal relationships, etc.)

(3) THE NATURE OF ENVIRONMENTAL QUALITY

Environmental quality -- or the quality of the physical environment of the school -- is one of the many factors affecting the educational process and a factor that is often overlooked.

Our study looks at the nature of environmental quality in the physical indoor and surrounding school setting.

Local knowledge
(1b) How do occupants[18] perceive, if at all, the nature of environmental quality in general?

We know how to define environmental quality in a forest, a factory, an office, a home, but what is it in a school? I am interested in what environmental quality means to you.

Could you describe for me what your definition of environmental quality might be?

    Prompts:
    What are some attributes that you think make for an exceptional school environment?

    What are some attributes that you think make for a good or bad physical setting for children or teachers?

    Probes:
    Could you give me a few incidents or situations to illustrate what you mean?

(1c) How do occupants perceive, if at all, the state of environmental quality in their specific school?

Using your concept of environmental quality, how would you rate the environmental quality of your school?

    Prompt: How does your school perform with respect to the aspects or attributes of quality you have identified in your definition?

Many of the aspects of environmental quality you have brought up are also mentioned in the research literature. There are a few more aspects I'd like to get your opinion on....

I will describe an attribute of environmental quality and I'd like to get your reaction to it.

Is this an appropriate or important factor to you? and why you think so?

If you have any questions as to the meaning of the terms, let me know and I can clarify.

---

[18]occupants = students, parents, teachers, administrative staff, custodial staff

Criteria for Environmental Quality

With each of the 14 attributes, the following general questions should be asked with regard to specific situations or instances concerning an attribute. There are four criteria for determining the level or nature of environmental quality: helpfulness, dependability, fairness and satisfaction. These questions address the four criteria for establishing the level of environmental quality exhibited for a particular attribute.

Helpful/Hindrance
How did this situation help or hinder your efforts to teach children?

Dependable/Not-Dependable
How often has this situation arose?

Do you know of other teachers and/or classrooms who have experienced this similar problem?

How did you resolve this situation? were you successful? if not, what would you recommend to resolve it?

Fair/Unfair
Do you think it is fair that you and your students had to endure this situation?

Satisfied/Not-Satisfied
How did you feel about that situation at the time? How do you feel about it now?

How satisfied are you with the outcome?

In your opinion, how important is this attribute? why?

Environmental Quality Attributes

1. Physical Safety and Security
The degree to which the physical environment of a place contributes to protecting occupants from harm, injury, or undue risk.

> What are some of the safety and security issues you have dealt with here?
> (unlawful entry, drugs, guns, other issues)
>
> Could you give me some examples (stories, incidents or situations) that can bring to life some of these issues for me?

2. Structural Flexibility
The degree to which the physical environment of a place can be easily changed to afford different activities.

> Has there been any situation in which there was a need to remove walls or change the configuration of the school layout to accommodate different activities? (renovations, alterations, modernizations)

3. Classroom Adaptability
The degree to which the physical environment in a place can afford many activities without restructuring.

> Have there been specific instances where you experienced problems using your classroom space effectively?
>
> (difficulties storing, retrieving, filing, or organizing student work or books and supplies? layout of your classroom furniture? floor materials? wall surfaces and display spaces? windows? group space, size)

4. Building Functionality

The degree to which the physical environment fits the organizational structure, behavior and processes with respect to size, configuration and adjacency.

> Does the layout of the building (e.g. number of floors, arrangement of rooms) fit the types of activities you and your colleagues are engaged in, or are you constantly adjusting your activities to fit the limitations of the size, configuration and location?

> Have there been situations where this has been an issue?

5. Social Places (Places for Social Interaction & Communication)

The degree to which a place provides opportunities for social exchange, communication and interaction thereby facilitating cognitive and emotional development.

> Is the school laid out in such a way to support informal social exchange among students and teachers and between teachers?

> Probes:
> How well does the teacher's lounge functions a place to interact with your fellow teachers?

> Do corridors and common spaces offer places for interaction among teachers and students or are they simply passageways used to get from one place in the building to another?

> Are corridors used, encouraged, discouraged as places for social interaction? why?

> Have there been incidents or situations where social interaction has been an problem? too much, or too little?

6. Personalization & Ownership

The degree to which occupants perceive a place as offering opportunities to create a personal and self-expressive environment, and to mark it as the property of the individual.

> How do you personalize your classroom?

> What opportunities do children have to personalize their spaces?

> Do you and other teachers have a sense of ownership of their school? Do children?

> Can you give me some special examples of places in the building that have been personalized?

7. Privacy

The degree to which a place provides opportunities for a place of seclusion from others or observation; a place where one can be free from intrusion.

> Do private places exist for teachers? where? are they adequate for their needs?

> Do children have places for privacy? where? If children don't have private places to go why don't they -- what is the argument against children having private places to go to get away?

> Have there been incidents or situations where privacy has been an issue for teachers or children?

8. History & Meaning

The degree to which occupants perceive a place as having historical and cultural references that create a sense of the familiar and provide a sense of meaning.

Does this school have a recognizable history? a collective memory? What is the story of this school?

9. Physical Comfort & Health
The degree to which occupants perceive a place as meeting their physiological needs with respect to thermal and air quality (thermal comfort), illumination (visual comfort) and noise (auditory comfort), odors (olfactory comfort), and surfaces (tactile comfort).

Is thermal and air quality something that is constantly an issue at your school?

Is noise and acoustics an issue or problem here at your school?

Is lighting an issue?

Have odors ever been an issue?

10. Psychological Safety
The degree to which occupants perceive a place as ensuring no harm, injury, or undue risk from the physical environment.

This attribute of EQ is slightly different from the previous attribute (safety and security). This attribute refers to *perceptions* of safety on the part of students and teachers despite school policies and actions.

From your perspective, how safe do your teachers and students feel in school?

Have there been incidents or situations where physical safety has been an issue?

11. Sensory Stimulation
The degree to which occupants perceive a place as providing a stimulating environment for learning that is safe yet challenging.

From your perspective, how stimulating are classrooms -- that is, how bright and cheerful are they? how creative or inspiring are they for children?

Can you provide any examples in your school of sensory stimulation and its importance to children's learning?

12. Crowding /Spaciousness
The degree to which occupants perceive a place as limiting opportunities for privacy, personal control or behavioral freedom.

Are classrooms crowded? what is the range of class sizes typically in your school?

Do teachers complain of crowded conditions or have they simply gotten use to it? How do they cope?

Have there been incidents or situations where crowding has been an issue?

13. Legibility, Orientation & Wayfinding
The degree to which occupants perceive a place as fostering a sense of orientation within the environment that reduces confusion and facilitates wayfinding.

How easy is it to find your way around the building?

Can visitors easily find their way?

What strategies have you used to improve wayfinding through the building?

14. Aesthetics & Appearance
The degree to which occupants perceive a place as attractive and provoking.

What are your views concerning the appearance of the building interior? and exterior?

What specific aspects of the school do you pay attention to regarding appearance? (corridors, shiny floors, exterior landscaping, paint) and why?

Do you receive comments from visitors to the school concerning its appearance?

How often have you felt the need to voice your concerns about the appearance of the building?

From your experience, has the custodial staff been responsive to your needs and concerns?

Do you have any suggestions for the custodial staff concerning the upkeep of the building that you have not previously made them aware of?

Anything you want to add that I have not addressed?

Now I'd like you to reassess your building based on this expanded list of attributes of EQ .....

1c) How do occupants perceive, if at all, the state of environmental quality in their specific school?

How do you rate the environmental quality of your school considering the attributes you feel are the most important to teaching and learning?

How might you see improving those aspects of environmental quality your school has not performed well in?

SUMMARY & NEXT STEPS

Thank you for your participation. Your responses will help us in assessing and improving the quality of the school environment here.

Take-Home Worksheet
I have a take home worksheet which I would like for you to fill out which asks you to rate the aspects of environmental quality.

Workshop Participation
Our next step in the research process will be to conduct a workshop with three or four teachers from this school. The purpose of the workshop will be to help us narrow our focus on the issues and concerns you and other teachers from your school have raised concerning this school building.

The result of the workshop will be a survey questionnaire that we will administer to a larger group of teachers at your school.

As a result of our discussion here, do you feel comfortable and willing to participate in a small group 90-minute workshop with a few of your colleagues later this term?

Take-Home Worksheet

I would like to thank-you for taking the time to interview with me today. In an effort to extend our interview discussion of environmental quality in schools, I would greatly appreciate your responses to the questions on the following worksheet pages.

Please feel free to answer them at your leisure and send your responses to me by mail in the envelope provided with this worksheet.

As stated in the Informed Consent Form:

Participants will not be identified directly. All information gathered by participants will be confidential and used anonymously. Participation is completely voluntary and participants may withdraw from the study at any time for any reason without penalty. A decision not to participate will involve no penalty or loss of benefits to which the participant is otherwise entitled; if a subject withdraws, the information gathered from that participant will be used only with the written or verbal permission of that participant.

Again, thank-you for your participation in this project.

Jeff Lackney

_____   _____
Name of Participant   Date

1. Important Attributes of Environmental Quality

Please indicate the level of importance ([1]= very important, [2]= somewhat important, [3]= not important) of each of the following attributes of environmental quality with respect to its influence on...

Attribute of Environmental Quality	...Student academic performance			...Student social development			...Teacher instructional performance		
Physical Safety and Security	[1]	[2]	[3]	[1]	[2]	[3]	[1]	[2]	[3]
Structural Flexibility	[1]	[2]	[3]	[1]	[2]	[3]	[1]	[2]	[3]
Classroom Adaptability	[1]	[2]	[3]	[1]	[2]	[3]	[1]	[2]	[3]
Building Functionality	[1]	[2]	[3]	[1]	[2]	[3]	[1]	[2]	[3]
Social Interaction & Communication	[1]	[2]	[3]	[1]	[2]	[3]	[1]	[2]	[3]
Personalization & Ownership	[1]	[2]	[3]	[1]	[2]	[3]	[1]	[2]	[3]
Privacy	[1]	[2]	[3]	[1]	[2]	[3]	[1]	[2]	[3]
History & Meaning	[1]	[2]	[3]	[1]	[2]	[3]	[1]	[2]	[3]
Physical Comfort & Health	[1]	[2]	[3]	[1]	[2]	[3]	[1]	[2]	[3]
Psychological Safety	[1]	[2]	[3]	[1]	[2]	[3]	[1]	[2]	[3]
Sensory Stimulation	[1]	[2]	[3]	[1]	[2]	[3]	[1]	[2]	[3]
Crowding /Spaciousness	[1]	[2]	[3]	[1]	[2]	[3]	[1]	[2]	[3]
Legibility, Orient. & Wayfinding	[1]	[2]	[3]	[1]	[2]	[3]	[1]	[2]	[3]
Aesthetics & Appearance	[1]	[2]	[3]	[1]	[2]	[3]	[1]	[2]	[3]

2. Student Academic Performance

Which **three** attributes from the list on the previous page do you feel are **the most important** to student academic performance?

_____   _____   _____

Why did you choose the three attributes you did?

_____

_____

3. Student Social Development

Which **three** attributes from the list on the previous page do you feel are **the most important** to student social development?

_____   _____   _____

Why did you choose the three attributes you did?

_____

_____

4. Teacher Instructional Performance

Which **three** attributes from the list on the previous page do you feel are **the most important** to teacher instructional performance?

_____   _____   _____

Why did you choose the three attributes you did?

_____

_____

5. Facility Management

Please identify (with a check) the attributes of environmental quality that you feel your facility management team (a) **is presently addressing,** and (b) **ideally should, but is not presently addressing, and why?**

Attribute of Environmental Quality	(a) addressing	(b) not addressing	Why have you identified these particular attributes?
Physical Safety & Security			
Structural Flexibility			
Classroom Adaptability			
Building Functionality			
Social Interaction & Communication			
Personalization & Ownership			
Privacy			
History & Meaning			
Physical Comfort & Health			
Psychological Safety			
Sensory Stimulation			
Crowding /Spaciousness			
Legibility, Orient. & Wayfinding			
Aesthetics & Appearance			

6. Personal Control

Please identify (with a check) the attributes of environmental quality that you feel you **(a) have adequate control over**; and, **(b) do not have adequate control over**, and why?

Attribute of Environmental Quality	(a) Have control	(b) Do not have control	Why have you responded as you have?
Physical Safety & Security			
Structural Flexibility			
Classroom Adaptability			
Building Functionality			
Places for Social Interaction			
Personalization & Ownership			
Privacy			
History & Meaning			
Physical Comfort & Health			
Psychological Safety			
Sensory Stimulation			
Crowding /Spaciousness			
Legibility, Orient. & Wayfinding			
Aesthetics & Appearance			

Informed Consent Form for Teacher Participants

I am Jeff Lackney, of the Department of Architecture and Urban Planning at the University of Wisconsin-Milwaukee. My colleague, Charles Brigden, and I are conducting a research project concerning how faculty, students and staff perceive the environmental quality of their schools. We would appreciate your participation in this study, as it will assist us in making recommendations for improving the environmental quality in your school and in other schools in the Baltimore City Public Schools (BCPS).

This research project will consist of case studies of five schools in BCPS. We will interview four teachers, an administrator, the head custodian, and parents from each school participating in the study. The interview will take approximately 45 minutes. In addition, we would like to survey students from each school using a short questionnaire survey to be administered by the school. Once the interview and survey process is complete, we will conduct one teacher's workshop consisting of four teachers from your school. This workshop will take approximately 90 minutes. Following the workshop and interviews, we may wish to conduct a short take-home questionnaire survey to be administered to the entire teaching staff to verify specific findings from the workshops, interviews, and student survey.

The four teachers willing to participate in this research project (as both interviewees and workshop participants) will be offered compensation of $75.00. Compensation will be awarded to teacher participants by mail with the conclusion of the final workshop or by February, 1996, which ever comes first. If a participant, for whatever reason, is unable to continue their involvement in the study, they will still be compensated in full.

Participants will not be identified directly. All information gathered by participants will be confidential and used anonymously. Participation is completely voluntary and participants may withdraw from the study at any time for any reason without penalty. A decision not to participate will involve no penalty or loss of benefits to which the participant is otherwise entitled; if a subject withdraws, the information gathered from that participant will be used only with the written or verbal permission of that participant.

Once the study is completed, we will be glad to give the results to you. In the meantime, if you have any questions, please ask us or contact:

Jeffery A. Lackney
School of Architecture and Urban Planning
University of Wisconsin-Milwaukee
Milwaukee, WI 53211
(414) 229-2591

If you have any complaints about your treatment as a participant in this study, please call or write:

Dr. Berri Forman, IRB
Institutional Review Board of the Protection of Human Subjects
Environmental Health, Safety and Risk Management
University of Wisconsin-Milwaukee
P.O. Box 413
Milwaukee, WI 53201
(414) 229-6016

Although Dr. Forman will ask your name, all complaints are kept in confidence.

I have received an explanation of the study and agree to participate. I understand that my participation in this study is strictly voluntary.

_____   _____
Name   Date

This research project has been approved by the University of Wisconsin-Milwaukee Institutional Review Board for the Protection of Human Subjects for a one year period.

Child Survey Questionnaire
Instructions to Teachers

The Environmental Quality Assessment Project
Conducted by the School of Architecture and Urban Planning
University of Wisconsin-Milwaukee

We are conducting a study that investigates the quality of your school's physical environment. We would like to get as many views on the quality of your school as we can -- *including your students*.

The purpose of the Child Survey Questionnaire is to obtain the child's perspective often left out of such evaluations of school physical environments. We believe the survey may provide some indication of the criteria by which children perceive and judge some aspects of environmental quality.

We ask, if possible, that you give your students about 10 minutes to complete this survey.

In administering this questionnaire to your students please read the following to your class:

"I would like you to answer a few questions about your school.

There are no right or wrong answers, only your feelings and opinions.

Take your time, don't rush and answer as many questions as you feel comfortable answering."

Thank-you for your participation!

Jeff Lackney
Principal Investigator

Dear Student,
We would like to ask you a few questions about your school

●●

What is your favorite place in school? why?

– What places in your school are fun to learn in? why?

– What do you like most about your classroom?

– What don't you like about your classroom?

●●

Thank-you for your help!

● ●

Could you draw a picture of your favorite place?

● ●

Thank-you for your help!

Parent Survey Questionnaire

The purpose of the parent survey questionnaire is to allow the widest possible range of perspectives into the assessment. The survey may provide additional indications of the criteria by which parents and community members perceive and judge some aspects of environmental quality.

We are conducting a survey to assess the quality of the learning environment for your child. We would greatly appreciate your comments and suggestions; they will help us to continuously improve our efforts to provide your children with a safe, secure, comfortable and satisfying experience.

1. What comments does your child often make about his or her school building and playgrounds? (If your child is near by do not hesitate to ask his or her opinion)

2. What are your concerns about the school you feel the school should focus on, or be aware of?

3. How have your experiences been when you have visited the school concerning the following areas:

   safety and security?

   appearance?

   orderliness?

   cleanliness?

   others...

4. Imagine, for a moment, that you are an architect designing an elementary school. What room would you put the most time and effort into if you wanted to create the greatest opportunity for learning? why?

Thank you for your participation. Your responses will help us in assessing and improving the environmental quality of the Jones school for the whole community.

Research Questions
Interview Guide for Custodians ·

The purpose of interviewing non-instructional staff prior to instructional staff is to gain an understanding of the types of issues, problems and concerns that students and teachers voice to others beside the researcher. This information will be useful in providing a context for questions to be asked of teachers in the next stage of data collection.

I thank you for agreeing to meet with me today. I'm going to ask you some open-ended questions about the types of issues, problems and concerns you run up against on a day-to-day basis while maintaining this school. Your comments will be kept confidential. By sharing your experiences with me, you will help us understand how well the school facility meets the needs of students, teachers, parents and the community-at-large.

I'd like to ask your permission to tape record our interview. The tape will not be shared with anyone outside of the research group and comments taken from the tape will be paraphrased and confidential. The tape will help me be more accurate in representing your views later on in the research process. Do I have your permission? May I begin?

0. Background questions

How long have you been here? What are your roles and responsibilities as part of the staff of Jones Elementary School?

In general, what are the kinds of concerns/complaints you typically respond to by teachers concerning the school facilities?

(prompts: hot/cold, appearance, operations of equipment, furnishings, environmental controls, doors, windows, cabinets, sinks, etc.)

Could you give me a recent example of the circumstances surrounding a few of these complaints?

How are these concerns/complaints typically resolved?

(prompts: delegate them? report them? deal with them on the spot?)

A far as you know, how many of these complaints actually get recorded and documented or logged?

Can you give me any other examples? What other types of problems do you encounter?

..... I'd like to turn, now, to the subject of environmental quality.....

1. THE NATURE OF ENVIRONMENTAL QUALITY

Our study looks at the nature environmental quality in the school setting. Environmental quality -- or the quality of the physical environment of the school -- is one of the many factors affecting the educational process and a factor that is often overlooked.

Local knowledge
(1b) How do occupants[19] perceive, if at all, the nature of environmental quality in general ?

---

[19]occupants = students, parents, teachers, administrative staff, custodial staff

I am interested in what environmental quality means to you -- generally.

Could you describe for me what your definition of environmental quality might be? · -

Prompts:
What are some characteristics that you think make for an exceptional school environment?

What are some characteristics that you think make for a good or bad setting for children or teachers?

Probes:
Could you give me a few incidents or situations to illustrate what you mean?

(1c) How do occupants perceive, if at all, the state of environmental quality in their specific school?

Using your definition of environmental quality, how would you rate the environmental quality of your school?

Prompt: How does your school perform with respect to quality as you have defined?

I have a few more aspects of quality I'd like to get your opinion on....

I will present you with a characteristic of environmental quality and I'd like to get your reaction to it.

I'm particularly interested in situations or examples from your experience of where these aspects of quality have come up.

Is this an appropriate or important factor to you? and why you think so?

If you have any questions concerning the meaning of the terms, let me know and I can clarify.

Environmental Quality Attributes

1. Safety and Security
The degree to which the physical environment of a place contributes to protecting occupants from harm, injury, or undue risk.

What are some of the safety and security issues you have dealt with here?
(unlawful entry, drugs, guns, other issues)

Could you give me some examples (stories, incidents or situations) that can bring to life some of these issues for me?

What are the school's policies concerning these safety and security issues?

In your opinion, how important is this attribute? why?

5. Social Interaction & Communication
The degree to which a place provides opportunities for social exchange, communication and interaction.

Is the school laid out in such a way to support informal social exchange among students and teachers and between teachers?

Have there been incidents or situations where social interaction between students and teachers has been an problem? too much, or too little?

Probes:

Are corridors used, encouraged, discouraged as places for social interaction? why?

Are common spaces often used as places for informal social exchange or are they simply spaces you pass through?

Do corridors offer places for interaction among teachers and students or are they simply passageways used to get from one place in the building to another?

What places in the building that lend themselves to useful informal interaction? (administrative lobby, common spaces, corridors, bathrooms)

In your opinion, how important is this attribute?

6. Personalization & Ownership
The degree to which occupants perceive a place as offering opportunities to create a personal and self-expressive environment, and to mark it as the property of the individual.

Do teachers and children have a sense of ownership of their school overall?

How do teachers personalize their classrooms?

What opportunities do children have to personalize their spaces?

Can you give me some special examples of places in the building that have been personalized?

In your opinion, how important is this attribute? why?

7. Privacy
The degree to which a place provides opportunities for a place of seclusion from others or observation; a place where one can be free from intrusion.

From your experience here, has there been incidents or situations where the need for privacy has been an issue for teachers and/or children? (prompt: to get away from the children)

Do private places exist for teachers? where? are they adequate for their needs?

Do children have places for privacy? where?

If children don't have private places to go why don't they -- what is the argument against children having private places to go to get away?

In your opinion, how important is this attribute? why?

8. History/Meaning
The degree to which occupants perceive a place as having historical and cultural references that create a sense of the familiar and provide a sense of meaning.

Do you know the story of this school? How it came to be, its history?

What kind of meanings does this school have for your personally?

How important is this attribute? why?

9. Physical Comfort & Health

The degree to which occupants perceive a place as meeting their physiological needs with respect to thermal and air quality (thermal comfort), illumination (visual comfort) and noise (auditory comfort), odors (olfactory comfort), and surfaces (tactile comfort).

Is thermal and air quality something that is constantly an issue here?

Is noise and acoustics an issue or problem here at your school? How was it resolved?

Is lighting an issue? How was it resolved?

Have odors ever been an issue?

How important is this attribute? why?

10. Physical Safety

The degree to which occupants perceive a place as ensuring no harm, injury, or undue risk from the physical environment.

This attribute of EQ is slightly different from the previous attribute (safety and security). This attribute refers to *perceptions* of safety on the part of students and teachers despite school policies and actions.

From your perspective, how safe do your teachers and students feel in school?

Have there been incidents or situations where physical safety has been an issue?

How important is this attribute? why?

11. Sensory Stimulation

The degree to which occupants perceive a place as providing a stimulating environment for learning that is safe yet challenging.

From your perspective, as you walk through the classrooms in the building, how stimulating are classrooms -- that is, how bright and cheerful are they? how creative or inspiring are they for children?

Can you provide any examples in your school of sensory stimulation and its importance to children's learning?

In your opinion, how important is this attribute? Why?

12. Crowding /Spaciousness

The degree to which occupants perceive a place as limiting opportunities for privacy, personal control or behavioral freedom.

Do teachers complain of crowded conditions or have they simply gotten use to it?
How do they cope?

Are classrooms crowded? what is the range of class sizes typically in your school?

Have there been particular incidents or situations where crowding has been an issue?

How important is this attribute?

13. Legibility, Orientation & Wayfinding

The degree to which occupants perceive a place as fostering a sense of orientation within the environment that reduces confusion and facilitates wayfinding.

Can visitors easily find their way through the building?

What strategies have you used to improve wayfinding through the building?

How important is this attribute? why?

14. Aesthetics & Appearance
The degree to which occupants perceive a place as attractive and provoking.

Do you receive comments from visitors to the school concerning its appearance?

What specific aspects of the school do you pay attention to regarding appearance? (corridors, shiny floors, exterior landscaping, paint) and why?

How important is this attribute? why?

3. FACILITY MANAGEMENT AND PERCEPTIONS OF QUALITY

I'd like to ask a few questions with regard to your perceptions of facility management and its role in maintaining a quality environment to teach and learn in.

Local knowledge
(3b) What do occupants see as the aspects of facility management that may have an influence on the environmental quality of the school?

Generally speaking -- what ways do you think facility management (custodial and maintenance and operations services) contributes to environmental quality in a school?

Which characteristics of quality do you think facility managers can influence?

(3c) What do occupants see as the aspects of facility management that may be having an influence on the environmental quality in their specific school?

Can you describe for me some examples or instances of when you felt you had an opportunity to contribute to the "improvement of environmental quality" of this school?

Informed Consent Form for Custodial Staff

I am Jeff Lackney, of the Department of Architecture and Urban Planning at the University of Wisconsin-Milwaukee. My colleague, Charles Brigden, and I are conducting a research project concerning how occupants of schools perceive the environmental quality of their schools. We would appreciate your participation in this study, as it will assist us in making recommendations for improving the environmental quality in your school and in other schools in the Baltimore City Public Schools (BCPS).

This research project will consist of a multi-site case study of four schools in BCPS. We will interview four teachers, an administrator, the head custodian, and parents from each school participating in the study. The interview will take approximately 45 minutes. In addition, we would like to survey students from each school using a short questionnaire survey to be administered by the school. Once the interview and survey process is complete, we will conduct one teacher's workshop consisting of four teachers from your school. This workshop will take approximately 90 minutes. Following the workshop and interviews, we may wish to conduct a short take-home questionnaire survey to be administered to the entire teaching staff to verify specific findings from the workshops, interviews, and student survey.

Participants will not be identified directly. All information gathered by participants will be confidential and used anonymously. Participation is completely voluntary and participants may withdraw from the study at any time for any reason without penalty. A decision not to participate will involve no penalty or loss of benefits to which the participant is otherwise entitled; if a subject withdraws, the information gathered from that participant will be used only with the written or verbal permission of that participant.

Once the study is completed, we will be glad to give the results to you. In the meantime, if you have any questions, please ask us or contact:

Jeffery A. Lackney
School of Architecture and Urban Planning
University of Wisconsin-Milwaukee
Milwaukee, WI 53211
(414) 229-2591

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I have received an explanation of the study and agree to participate. I understand that my participation in this study is strictly voluntary.

---------------------------------------   -------------------------
Name   Date

This research project has been approved by the University of Wisconsin-Milwaukee Institutional Review Board for the Protection of Human Subjects for a one year period.

Group Workshop #1

The first three phases have all been divergent phases. The goal of the next phases will be to converge the data and issues on those aspects of environmental quality that are salient to individuals and the organization. The purpose of the workshop will be to prioritize the issues for consideration and to use the results of this workshop to develop a survey questionnaire to be distributed to a larger sample of teachers within each school.

Part I: Introductions (5 minutes)

I would like to thank you for agreeing to meet for this workshop today.

The total time of the workshop will be 90 minutes. The workshop will be broken into 5 parts:

1. Introduction (5 min.),
2. Presentation of Preliminary Results (10 min.),
3. Discussion (35 min.),
4. Prioritization (30 min.) and
5. Evaluation (5 min.), Final Remarks (5 min.).

We have gathered information from several interviews with yourselves, students, parents, staff and administration. We have compiled the results and would like to share them with you.

The purpose of this workshop is to:
  1. get your reactions to these results, and
  2. to have you prioritize the issues and concerns most salient to you as a group.

Our research team will use the results of this workshop to develop a refined survey questionnaire to be distributed to a larger group of teachers within each school.

I'd like to ask your permission to tape record our interview. The tape will not be shared with anyone outside of the research group and comments taken from the tape will be paraphrased and anonymous. Do I have your collective permission? May I begin?

Part II: Presentation of Preliminary Results (10 minutes)

At this point, the results of the principal's, custodial, teachers' interviews and child and parent surveys will be summarized.

Part III: Discussion (35 minutes)

This part of the workshop will consist of a series of questions I will pose to you concerning the results. The purpose of this part is to gather further clarification from you about what the data means from our various perspectives and to discover the degree of agreement on each issue. May I begin?

Part IV: Prioritization (30 minutes)

This part of the workshop will consist of a series of silent voting on each of the issues raised in the previous two parts.

Part V: Evaluation (5 minutes)

This final part consists of the group will assess the degree of success of, and discuss ways to improve the workshop process.

Part VI. Closing Remarks (5 minutes)

Thank you all for participating in the workshop. I would appreciate it if you could participate in a final workshop in a few months to review the results of the wider teacher survey questionnaire. If you are interested please let me know so that I can schedule the follow-up workshop. If you would like to receive a copy of the final report please let me know.

Teacher Survey Questionnaire

This survey questionnaire is designed to illicit reactions from a wider sample of the teacher population of the school. The questionnaire is intended to be the result of the most salient issues, concerns and questions related to environmental quality identified by all the workshop participants across all schools in the study.

This instrument will be the primary tool for assessing other schools in the district. The tool may be transferred to other districts, however, it is advised that each school district tailor their survey questionnaire to the needs and concerns of that district as a whole by completing a similar action research process represented by the previous steps.

This survey is the final phase of the Environmental Quality Assessment Project. We expect that the completion of this survey will take 15-20 minutes.

The objective of this study is to understand how physical environmental quality contributes to the educational process. Concurrently, we are interested in identifying aspects of environmental quality that are of concern in your school.

Prior to this survey, we interviewed your principal and four teachers, the head custodian, and your parent liaison. In addition, we asked the classroom teachers to have their students draw pictures of their favorite places in the school and tell us why they liked them. Finally, we conducted a workshop with these same teachers and your principal to determine possible issues or concerns within the school's environment.

By responding to this survey you are consenting to participate in this study.

Participants will not be directly identified. All statements or information gathered from participants will be confidential, and will be reported in the aggregate only. Once the study is completed, we will be glad to share the results with you.

It is our sincere hope that through our work with you on this project we succeed in supporting your school's on-going efforts toward improvement.

Jeff Lackney
Principal Investigator
School of Architecture & Urban Planning
University of Wisconsin-Milwaukee

1. SAFETY AND SECURITY

SAFETY & SECURITY refers to the degree to which you feel the school building contributes to protecting occupants from harm, injury, or undue ri. issues related to...Safety might include slippery floors, unsafe playground equipment, emergency lighting, child safety in parking lots...Security might i outdoor lighting, unlawful entry of intruders, drugs, weapons, stolen items, or surveillance.

Please circle the single most appropriate response to each question asked below.

[1] How frequently do SAFETY & SECURITY issues occur?	Daily	Weekly	Monthly	Yearly	Never
[2] Do you feel that the manner in which SAFETY & SECURITY concerns have been dealt with at your school have been **fair or unfair to teachers and students?**	Fair	Somewhat Fair	Neutral	Somewhat Unfair	Unfair
[3] To what degree do you feel you have control over your personal SAFETY at your school?	Complete Control	Significant Control	Some Control	Little Control	No Control
[4] Have SAFETY & SECURITY concerns **helped or hindered** the efforts of your school to provide a safe environment for teaching and learning?	Very Helpful	Somewhat Helpful	Neutral	Somewhat Hindering	Very Hindering
[5] Overall, how **pleased or disappointed** are you in the extent to which SAFETY & SECURITY concerns have been addressed?	Very Pleased	Somewhat Pleased	Neutral	Somewhat Disappointed	Very Disappointed
[6] How important do you think SAFETY & SECURITY is in supporting the goal of...					
(a) **maintaining a safe, healthy and nurturing learning climate?**	Very Important	Somewhat Important	Neutral	Somewhat Unimportant	Very Unimportant
(b) **increasing student achievement?**	Very Important	Somewhat Important	Neutral	Somewhat Unimportant	Very Unimportant

[7] Additional comments?

2. BUILDING FUNCTIONALITY

BUILDING FUNCTIONALITY refers to the degree to which you feel the various places within the school building are functionally compatible with yi educational programs and activities. Specific issues related to building functionality might include problems with conducting cooperative learn instructional space, adequacy of space size and configuration of classrooms, assembly spaces or other spaces within the school.

Please circle the single most appropriate response to each question asked below.

[1] How frequently do you encounter issues of BUILDING FUNCTIONALITY?	Daily	Weekly	Monthly	Yearly	Never
[2] Do you feel that problems of BUILDING FUNCTIONALITY have been **fair or unfair to teachers and students?**	Fair	Somewhat Fair	Neutral	Somewhat Unfair	Unfair
[3] To what degree do you feel you have control over the BUILDING FUNCTIONALITY in the school?	Complete Control	Significant Control	Some Control	Little Control	No Control
[4] Have BUILDING FUNCTIONALITY concerns **helped or hindered** the efforts of your school to provide an effective environment for teaching and learning?	Very Helpful	Somewhat Helpful	Neutral	Somewhat Hindering	Very Hindering
[5] Overall, how **pleased or disappointed** are you in the extent to which BUILDING FUNCTIONALITY concerns have been addressed at your school?	Very Pleased	Somewhat Pleased	Neutral	Somewhat Disappointed	Very Disappointed
[6] How important do you think BUILDING FUNCTIONALITY is in supporting the goal of...					
(a) **maintaining a safe, healthy and nurturing learning climate?**	Very Important	Somewhat Important	Neutral	Somewhat Unimportant	Very Unimportant
(b) **increasing student achievement?**	Very Important	Somewhat Important	Neutral	Somewhat Unimportant	Very Unimportant

[7] Additional comments?

3. CLASSROOM ADAPTABILITY

CLASSROOM ADAPTABILITY refers to the degree to which you feel that the physical classroom space can be adapted to different and desired activities and functions. Specific issues related to Classroom Adaptability might include the inability to accommodate different furniture arrangements room for instructional needs, problems with book, supply, student and personal storage, not enough display space, structural obstructions, etc.

Please circle the single most appropriate response to each question asked.

[1] How frequently do you experience CLASSROOM ADAPTABILITY as a hindrance to your efforts?	Daily	Weekly	Monthly	Yearly	Never
[2] Do you feel that concerns related to CLASSROOM ADAPTABILITY have been fair or unfair to teachers and students?	Fair	Somewhat Fair	Neutral	Somewhat Unfair	Unfair
[3] To what degree do you feel you have control over the ADAPTABILITY of your classroom?	Complete Control	Significant Control	Some Control	Little Control	No Control
[4] Have the ADAPTABILITY concerns you experience within your classroom helped or hindered your efforts to provide an effective environment for teaching and learning?	Very Helpful	Somewhat Helpful	Neutral	Somewhat Hindering	Very Hindering
[5] Overall, how pleased or disappointed are you in the extent to which your classroom is ADAPTABLE?	Very Pleased	Somewhat Pleased	Neutral	Somewhat Disappointed	Very Disappointed
[6] How important do you think CLASSROOM ADAPTABILITY is in supporting the goal of...					
(a) maintaining a safe, healthy and nurturing learning climate?	Very Important	Somewhat Important	Neutral	Somewhat Unimportant	Very Unimportant
(b) increasing student achievement?	Very Important	Somewhat Important	Neutral	Somewhat Unimportant	Very Unimportant

[7] Additional comments?

4. PLACES FOR SOCIAL INTERACTION (SOCIAL PLACES)

SOCIAL PLACES refers to the degree to which you feel that places within the school building provide opportunities for meaningful social exchange and Specific issues related to SOCIAL PLACES might include classrooms that do not provide opportunities for small group instruction, places in the promote informal social exchange such as a lobbies, hallways, restrooms, and playgrounds, etc.

Please circle the single most appropriate response to each question asked.

[1] How frequently are concerns over SOCIAL PLACES an issue at your school?	Daily	Weekly	Monthly	Yearly	Never
[2] Do you feel that the quality of SOCIAL PLACES within your school are (a) fair or unfair to teachers?	Fair	Somewhat Fair	Neutral	Somewhat Unfair	Unfair
(b) fair or unfair to students?	Fair	Somewhat Fair	Neutral	Somewhat Unfair	Unfair
[3] To what degree do you feel you have control over SOCIAL PLACES in your school?	Complete Control	Significant Control	Some Control	Little Control	No Control
[4] Have SOCIAL PLACES helped or hindered the efforts of your school to provide a safe environment for teaching and learning?	Very Helpful	Somewhat Helpful	Neutral	Somewhat Hindering	Very Hindering
[5] Overall, how pleased or disappointed are you in the extent to which opportunities for SOCIAL PLACES have been provided at your school?	Very Pleased	Somewhat Pleased	Neutral	Somewhat Disappointed	Very Disappointed
[6] How important do you think SOCIAL PLACES are in supporting the goal of...					
(a) maintaining a safe, healthy and nurturing learning climate?	Very Important	Somewhat Important	Neutral	Somewhat Unimportant	Very Unimportant
(b) increasing student achievement?	Very Important	Somewhat Important	Neutral	Somewhat Unimportant	Very Unimportant

[7] Additional comments?

5. PERSONALIZATION & OWNERSHIP

PERSONALIZATION & OWNERSHIP refers to the degree to which you feel the school building offers opportunities to create a personal and self environment and engender a sense of ownership. Specific issues related to personalization and ownership might include student work display individual students to personalize desks and work areas, personal lockers, personalization of classrooms by teachers, parental volunteerism, ne residents respect school grounds, etc.

Please circle the single most appropriate response to each question asked.

[1] How frequently are issues pertaining to PERSONALIZATION & OWNERSHIP discussed at your school?	Daily	Weekly	Monthly	Yearly	Never

[2] Do you feel that the opportunities for PERSONALIZATION & OWNERSHIP within your school are					
(a) fair or unfair to teachers?	Fair	Somewhat Fair	Neutral	Somewhat Unfair	Unfair
(b) fair or unfair to students?	Fair	Somewhat Fair	Neutral	Somewhat Unfair	Unfair
[3] To what degree do you feel you have control over the PERSONALIZATION & OWNERSHIP of your classroom and school overall?	Complete Control	Significant Control	Some Control	Little Control	No Control
[4] Have PERSONALIZATION & OWNERSHIP issues helped or hindered the efforts of your school to provide an effective environment for teaching and learning?	Very Helpful	Somewhat Helpful	Neutral	Somewhat Hindering	Very Hindering
[5] Overall, how pleased or disappointed are you in the extent to which PERSONALIZATION & OWNERSHIP concerns have been addressed at your school?	Very Pleased	Somewhat Pleased	Neutral	Somewhat Disappointed	Very Disappointed
[6] How important do you think PERSONALIZATION & OWNERSHIP is in supporting the goal of...					
(a) maintaining a safe, healthy and nurturing learning climate?	Very Important	Somewhat Important	Neutral	Somewhat Unimportant	Very Unimportant
(b) increasing student achievement?	Very Important	Somewhat Important	Neutral	Somewhat Unimportant	Very Unimportant

[7] Additional comments?

6. PRIVACY

PRIVACY refers to the degree to which you feel that there are places within the school building which provide opportunities for an individual or a small free from the intrusion of others. Specific issues related to privacy might include the availability of places to have private conversation, to be alone moment to collect your thoughts, and/or places for students to be alone for a few minutes.

Please circle the single most appropriate response to each question asked.

[1] How frequently are concerns for PRIVACY at issue in your school?	Daily	Weekly	Monthly	Yearly	Never
[2] Do you feel that the opportunities for PRIVACY within your school are					
(a) fair or unfair to teachers?	Fair	Somewhat Fair	Neutral	Somewhat Unfair	Unfair
(b) fair or unfair to students?	Fair	Somewhat Fair	Neutral	Somewhat Unfair	Unfair
[3] To what degree do you feel you have control over your PRIVACY?	Complete Control	Significant Control	Some Control	Little Control	No Control
[4] Have PRIVACY concerns helped or hindered the efforts of your school to provide a effective environment for teaching and learning?	Very Helpful	Somewhat Helpful	Neutral	Somewhat Hindering	Very Hindering
[5] Overall, how pleased or disappointed are you in the extent to which PRIVACY concerns have been addressed?	Very Pleased	Somewhat Pleased	Neutral	Somewhat Disappointed	Very Disappointed
[6] How important do you think PRIVACY is in supporting the goal of...					
(a) maintaining a safe, healthy and nurturing learning climate?	Very Important	Somewhat Important	Neutral	Somewhat Unimportant	Very Unimportant
(b) increasing student achievement?	Very Important	Somewhat Important	Neutral	Somewhat Unimportant	Very Unimportant

[7] Additional comments?

7. PHYSICAL COMFORT & HEALTH

PHYSICAL COMFORT & HEALTH refers to the degree to which you feel the indoor environment meets your physiological needs with respect to their quality, illumination, noise and odors. Specific issues related to **physical comfort and health** might include classrooms that are either too hot inadequately circulated air, lighting quality, acoustic and noise issues and unpleasant odors.

Please circle the single most appropriate response to each question asked.

[1] **How frequently do concerns of PHYSICAL COMFORT & HEALTH arise at your school?**	Daily	Weekly	Monthly	Yearly	Never
[2] **Do you feel that the manner in which PHYSICAL COMFORT & HEALTH concerns have been dealt with at your school have been fair or unfair to teachers and students?**	Fair	Somewhat Fair	Neutral	Somewhat Unfair	Unfair
[3] **To what degree do you feel you have control over PHYSICAL COMFORT & HEALTH issues at the school?**	Complete Control	Significant Control	Some Control	Little Control	No Control
[4] **Have PHYSICAL COMFORT & HEALTH concerns you have identified above helped or hindered the efforts of your school to provide a safe environment for learning?**	Very Helpful	Somewhat Helpful	Neutral	Somewhat Hindering	Very Hindering
[5] **Overall, how pleased or disappointed are you to the extent to which PHYSICAL COMFORT & HEALTH concerns have been addressed at your school?**	Very Pleased	Somewhat Pleased	Neutral	Somewhat Disappointed	Very Disappointed
[6] **How important is PHYSICAL COMFORT & HEALTH in supporting the goal of...**					
(a) **maintaining a safe, healthy and nurturing learning climate?**	Very Important	Somewhat Important	Neutral	Somewhat Unimportant	Very Unimportant
(b) **increasing student achievement?**	Very Important	Somewhat Important	Neutral	Somewhat Unimportant	Very Unimportant

[7] **Additional comments?**

8. SENSORY STIMULATION

SENSORY STIMULATION refers to the degree to which you feel the school building provides a stimulating environment for learning that is safe yet Specific issues related to **sensory stimulation** might include brightness and cheerfulness of classrooms, hallways, assembly spaces, inspiring and c displays, visually exciting learning spaces, a variety of textural changes and colors, etc.

Please circle the single most appropriate response to each question asked.

[1] **How frequently are issues of SENSORY STIMULATION a concern at your school?**	Daily	Weekly	Monthly	Yearly	Never
[2] **Do you feel that the concerns for SENSORY STIMULATION have been fair or unfair to teachers and students?**	Fair	Somewhat Fair	Neutral	Somewhat Unfair	Unfair
[3] **To what degree do you feel you have control over SENSORY STIMULATION in your classroom and school overall?**	Complete Control	Significant Control	Some Control	Little Control	No Control
[4] **Have SENSORY STIMULATION concerns helped or hindered the efforts of your school in providing a safe environment for learning?**	Very Helpful	Somewhat Helpful	Neutral	Somewhat Hindering	Very Hindering
[5] **Overall, how pleased or disappointed are you in the extent to which SENSORY STIMULATION concerns have been addressed at your school?**	Very Pleased	Somewhat Pleased	Neutral	Somewhat Disappointed	Very Disappointed
[6] **How important is SENSORY STIMULATION in supporting the goal of...**					
(a) **maintaining a safe, healthy and nurturing learning climate?**	Very Important	Somewhat Important	Neutral	Somewhat Unimportant	Very Unimportant
(b) **increasing student achievement?**	Very Important	Somewhat Important	Neutral	Somewhat Unimportant	Very Unimportant

[7] **Additional comments?**

9. CROWDING/SPACIOUSNESS

CROWDING/SPACIOUSNESS refers to the degree to which you feel the school building cannot adequately accommodate the number of students a staff occupying it. Specific issues related to crowding/spaciousness might include problems with overcrowding in classrooms, congested hallwa administrative offices and other spaces in the school building.

Please circle the single most appropriate response to each question asked.

[1] How frequently is CROWDING/ SPACIOUSNESS an issue at your school?	Daily	Weekly	Monthly	Yearly	Never
[2] Do you feel that the manner in which CROWDING/SPACIOUSNESS concerns have been dealt with at your school have been **fair or unfair to teachers and students**?	Fair	Somewhat Fair	Neutral	Somewhat Unfair	Unfair
[3] To what degree do you feel you have **control** over the CROWDING/ SPACIOUSNESS at the school?	Complete Control	Significant Control	Some Control	Little Control	No Control
[4] Have CROWDING/ SPACIOUSNESS concerns you have identified above **helped or hindered** the efforts of your school to provide a safe environment for learning?	Very Helpful	Somewhat Helpful	Neutral	Somewhat Hindering	Very Hindering
[5] Overall, how **pleased or disappointed** are you in the extent to which CROWDING/ SPACIOUSNESS concerns have been addressed at your school?	Very Pleased	Somewhat Pleased	Neutral	Somewhat Disappointed	Very Disappointed
[6] How important is CROWDING/ SPACIOUSNESS in supporting the goal of...					
(a) **maintaining a safe, healthy and nurturing learning climate?**	Very Important	Somewhat Important	Neutral	Somewhat Unimportant	Very Unimportant
(b) **increasing student achievement?**	Very Important	Somewhat Important	Neutral	Somewhat Unimportant	Very Unimportant

[7] Additional comments?

10. AESTHETICS & APPEARANCE

AESTHETICS & APPEARANCE refers to the degree to which you feel the school building is attractive and provoking. Specific issues related to a appearance might include the appearance and upkeep of the exterior of the building, the visual appearance of the building entrance and lobbies cleanliness of floor, wall and ceiling surfaces, the orderliness and cleanliness of classrooms, etc.

Please circle the single most appropriate response to each question asked.

[1] How frequently do concerns with AESTHETICS & APPEARANCE arise at your school?	Daily	Weekly	Monthly	Yearly	Never
[2] Do you feel that the manner in which AESTHETICS & APPEARANCE concerns have been dealt with at your school have been **fair or unfair to teachers and students**?	Fair	Somewhat Fair	Neutral	Somewhat Unfair	Unfair
[3] To what degree do you feel you have **control** over the AESTHETICS & APPEARANCE of the school?	Complete Control	Significant Control	Some Control	Little Control	No Control
[4] Have AESTHETICS & APPEARANCE CONCERNS you have identified above **helped or hindered** the efforts of your school to provide a safe environment for learning?	Very Helpful	Somewhat Helpful	Neutral	Somewhat Hindering	Very Hindering
[5] Overall, how **pleased or disappointed** are you in the extent to which AESTHETICS & APPEARANCE concerns have been adequately addressed at your school?	Very Pleased	Somewhat Pleased	Neutral	Somewhat Disappointed	Very Disappointed
[6] How important is AESTHETICS & APPEARANCE in supporting the goal of...					
(a) **maintaining a safe, healthy and nurturing learning climate?**	Very Important	Somewhat Important	Neutral	Somewhat Unimportant	Very Unimportant
(b) **increasing student achievement?**	Very Important	Somewhat Important	Neutral	Somewhat Unimportant	Very Unimportant

[7] Additional comments?

Group Workshop #2

This workshop will consist of interpreting the findings from the survey and beginning the process of developing recommendations for action to improve environmental quality in the schools being assessed.

Part I: Introductions (5 minutes)

I would like to thank you for agreeing to meet for our final workshop today. The total time of the workshop will be once again 90 minutes. The workshop will be broken into 5 parts:
1. Introduction (5 min.),
2. Presentation of Preliminary Results (10 min.),
3. Discussion (35 min.),
4. Recommendations (30 min.) and Evaluation (5 min.),
5. Final Remarks (5 min.)

We have gathered information from the teacher survey questionnaire. We have compiled the results and would like to share it with you.

The purpose of this workshop is to:
1. get your reactions to these results, and
2. to have you consider recommended actions that might be taken to improve the environmental quality conditions within the school.

Our research team will use the results of this workshop to develop a final report to be publicly distributed.

I'd like to ask your permission to tape record our interview. The tape will not be shared with anyone outside of the research group and comments taken from the tape will be paraphrased and anonymous. Do I have your collective permission? May I begin?

Part II: Presentation of Survey Results (10 minutes)

At this point, the results of the principal's, custodial, teachers' interviews and child and parent surveys will be summarized.

Part III: Discussion (35 minutes)

This part of the workshop will consist of a series of questions I will pose to you concerning the results. The purpose of this part is to gather further clarification from you about what the data means from your perspective and to discover the degree of agreement on each issue. May I begin?

Part IV: Recommendations (30 minutes)

This part of the workshop will consist of a series of silent voting on each of the issues raised in the previous two parts.

Part V: Evaluation (15 minutes)

This final part consists of the group assessing the degree of success of the workshop process.

Group Workshop #3

The final workshop will consist of developing more detailed recommendations for action to improve environmental quality in the schools being assessed. The content of the workshops will be summarized and a final report will be developed that summarizes all the results of the study and the findings and interpretations of the working groups.

The objective of this final part is to apply the knowledge gained during the evaluation to improve the environmental quality of the places evaluated. Problems are fed back into the processes that can best address those problems. The final step calls for addressing the continuous improvement of the assessment procedure itself.

Part I: Identify nature of problems

From the previous step, a series of environmental concerns, issues and problems has emerged. These problems can be categorized or classified as either problems of knowledge, design or implementation. From this classification, it will be easier to identify change agents to help address the problem.

- List the problems and/or issues that have surfaced from surveys:

- Which problems are due to problems of knowledge?

- Which problems are due to problems of design?

- Which problems are due to problems of implementation?

- Which problems are due to problems of operations?

Part II: Identify processes to address prioritized issues

This part of the workshop identifies the process by which particular problems or issues can be resolved.

- Which problems could be solved through increasing the knowledge of occupants or facility managers toward these problem/issue? How?

- Which problems/issues could be solved through improving operations and management procedures? How?

- Which problems could be solved through redesign and construction? How?

- Which problems could be solved by engaging the regulatory process? How?

Part III: Evaluating effectiveness of procedure

- Have all places been assessed, and if so, has all relevant data been collected?

- Are there problems with the scope of the project which have surfaced? If so, what are they and how might the scope be revised to accommodate/address these problems?

- Are there problems with the manner in which problems have been categorized and assigned to a particular process?

- If so, what are they and how might this procedure be revised to accommodate/address these problems?

- What was the most valuable part of this procedure for the school?

APPENDIX D: CASE STUDIES

The Environmental Quality Assessment Project
Baltimore City Public Schools

Case Study Report: Dr. Rayner Browne Elementary School #25

Prepared by J. Lackney
Johnson Controls Institute for Environmental Quality in Architecture
School of Architecture & Urban Planning
University of Wisconsin-Milwaukee

PROJECT OVERVIEW

This report documents specific environmental quality concerns of one of five elementary schools in the Baltimore City Pubic Schools. This report serves not only as a record of the environmental quality concerns themselves, but also describes the assessment process within which these concerns have arisen.

This section provides an summary of the project objectives, problem and approach, and process and procedures of the Baltimore Environmental Quality Assessment Project.

Objectives

The objectives of the Baltimore Environmental Quality Assessment Project project were to:

- develop an occupant-driven environmental quality assessment process through which environmental quality concerns can be creatively identified, addressed and influenced by school occupants themselves.

- assess environmental quality from the perspective of the experiences of students, teachers, staff, administrators, and parent volunteers in each of five Baltimore City Public Schools that chose to participate in this project;

- understand how environmental quality may or may not contribute to the educational process in each school with respect to Student Academic Performance, Student Social Development, and Teacher Instructional Performance; and,

- understand the role of facility management in maintaining and improving environmental quality.

For Dr. Rayner Browne Elementary School #25, this report documents specific aspects of environmental quality of concern to the school. The assessment process was not conducted to judge the final worth or merit of the school as it relates to environmental quality. Rather, the intent of this project was to provide information useful for improving the environmental qualities of the school, especially those that may have some impact on the effectiveness of the educational process. It is the hope of all involved, that the results of this study be considered an affirmative step toward improving environmental quality at Rayner Browne.

Each school case study investigation followed a research process in which a selected number of teachers and administrators participated in actively clarifying the scope of the project, identifying and prioritizing environmental quality problems, issues and concerns, and formulating strategies for addressing these concerns.

The report that follows briefly summarizes the project activities and assessment process conducted within a seven month period between August, 1995 and February, 1996. Any mention of individual names are fictitious to protect the anonymity of participants in the study.

In July of 1995, Dr. Rayner Browne Elementary School agreed to participate in the Environmental Quality Assessment Project.

During the first visit on August 1, 1995, a physical inventory and preliminary walkthrough of Rayner Browne was conducted, along with interviews of the principal and the head custodian.

During the second visit on September 20, 1995, a full day of observation was conducted which included behavior mapping, informal and formal interviews with teachers and photographic documentation of the school-in-use. In addition, 45-minute semistructured interviews were conducted with three classroom teachers and one instructional specialist. Each teacher was asked to fill out a teacher survey-worksheet, as well as to administer a student survey.

Prior to a final visit on December 12, 1995, information gathered from the previous visit was tallied and organized into a series of potential environmental quality issues to be discussed during the workshop. Workshop materials included a list of all issues, floor plans showing the location of issues throughout the building, a presentation board containing photographs of problem areas. Also included were individual issue cards and a blank matrix worksheet for ranking issues by priority (high, moderate, low, none) and the potential impact, if any, on one of three educational outcomes (student performance, social development, teacher performance). The workshop, with a working group of four teachers and the assistant principal, lasted a total of 90 minutes.

In the following Spring, a teacher survey was administered to gather further information regarding teacher perceptions of environmental quality.

MAKING CONNECTIONS

Dr. Rayner Browne Elementary School, serving Pre-kindergarten through Fifth grade in the Madison-East End Neighborhood, is a school struggling to make meaningful connections with their surrounding community, in an effort to provide a safe environment for their students. In the view of Ms. Grafton, the principal of the school for the last four years, the goals of the school are: to improve performance, increase attendance, provide a safe environment for learning, and expand parent involvement. In her opinion, all of these goals are being adversely affected by the external influences of the surrounding community. For instance, families within the community are highly mobil, resulting in the school testing students they have not taught, or not testing the students they have. In terms of parental involvement, the principal insists, "We just can't get parents to get totally involved in our program and we have worked real hard at it." Ms. Clareson, the new parent liaison, had at the beginning of the year been able to attract only nine parent volunteers with two more joining later in the year — a number not nearly as many as is needed at the school. The lack of parental involvement in turn has an affect on student attendance which has been as low as 89%, a full five percentage points below their goal of 94%. Ms. Grafton states, "We have to work hard to get them to come to school... for some of them, we have to go door to door."

"Partnership" relationships with surrounding businesses are still rather minor. For example, the school is a partner with the manager of the "Pride" grocery store just west of their school; he provides, on occasion, treats for perfect attendance. As Ms. Grafton explains, "This is a community where most of the businesses are bars, so we use them as much as we can." The bar, adjacent to the east end of their school, has provided money for graduation exercises as well as other treats for students at the school. Recently, a new partnership has been formed with John Hopkins.

Dr. Rayner Browne Elementary School, a Pre K-5 school with a projected enrollment of 328 students, is located off of Chase Street one and a half miles northeast of the Central Business District and only a few blocks away from the John Hopkins Hospital complex on Monument Street. The two story brown brick school building is bounded by a residential Chase Street, a dead end to Montford Avenue, an alley to the north, Milton Avenue and residences to the east, a grass playing field and the B&O Railroad tracks to the south, and a "Pride" grocery store to the west that is sited off of Patterson Park Avenue. Across the streeet from the very pedestrian-active Chase Street are a series of brick rowhouses, a quarter of which have been abandoned or are in a severe state of disrepair. On the corner of Chase and Montford is Freddie's Steeplechase Bar, the bar that through the efforts of the prinicipal has become one of several burgeoning "partners" with Rayner Browne.

When asked about how well she feels the school has met their goals, Ms. Grafton

Chase Street

Montford Ave.

Parking

Alley

Main Entry

Playground

Dr. Rayner Browne Elementary School

Tot Lot

Playfield

Railroad Tracks

<u>Site Plan</u>

summarizes, "I feel good about our efforts, but I don't feel good about our accomplishments in meeting those goals."

Many of the on-going efforts of the principal, such as improving the condition of the building and grounds have been aided by the presence of their private facilities management company Johnson Controls, Inc. Ms. Grafton states, "Johnson Controls has kept up the grounds much better now...these guys get out every morning and do it over and over...its a problem still but there seems to be some recognition from the community." She continues to explain that with the help of her custodial staff, the school was instrumental in cleaning up the city alley all the way to Milton Avenue.

Beginning on July 22, 1992 and ending on March 7, 1996, Dr. Rayner Browne Elementary School had been designated as a Tesseract school managed by Education Alternatives, Inc. (EAI) a private educational management firm, the lead partner in what was called the Alliance for Schools that Work· The Alliance for Schools That Work was

a joint partnership between Educational Alternatives, Inc. (EAI), Johnson Controls, Inc., KPMG Peat Marwick and Computer Curriculum Corporation. EAI was the lead member of the Alliance, responsible for all instructional services; Johnson Controls was responsible for all non-instructional support functions including custodial, maintenance, grounds, security, and administrative services; KPMG Peat Marwick was responsible for managing the schools' fiscal operations; and Computer Curriculum Corporation was responsible for developing the computerized curriculum used by EAI.

The Alliance's charge was to manage, operate and maintain nine public schools totaling 810,800 SF and serving over 4,800 students. Facility improvements included lighting retrofits, mechanical system renovations, roof replacements, window replacements, landscaping projects, intrusion and fire alarm upgrades, bathroom remodeling, and extensive painting and carpet installation. In total, the Alliance provided Rayner Browne and eight other elementary schools with new computers and software, rehabilitated the school buildings, and established the Tesseract educational program that espouses the efficacy philosophy that all children can learn.
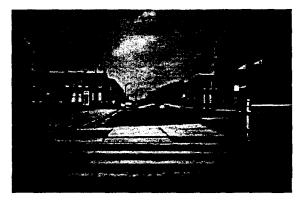
A DAY AT THE SCHOOL

"It has to do with the entire environment...it has to do with what those children come in with...what their understanding is about the school and the outside... [and] what kind of frustrations they bring in." [1st Grade Teacher]

Neighborhood quality is one of the greatest concerns for the working group at Rayner Browne. Although they feel safe within their school building, venturing out on the site can be nerve-racking for teachers responsible for thirty-two students each. Several teachers described a day in late September when gun fire was heard only a block away down Montford Street. Immediately upon hearing the shots, the teachers swiftly rushed their students back into the building. Afterwards, one of the teachers realized that she had been more visably shaken and frightened than her young students. The teacher was struck with their calm behavior: she observed that the students did not appear to show as much emotion or outward fear during or after the situation. Apparently, the teacher reasoned, these children see and hear this type of violent behavior everyday and have grown accustomed to it.

Concerns over neighborhood quality were seen as being of high priority for the working group at the school. On later reflection, the teachers agreed that the ex-

View of neighborhood from main entry stairs

periences and problems of these students are brought directly into the classroom every-day and are expressed through a range of emotional behaviors from fighting to social withdrawal. As one teacher explained, referring to the issue of neighoborhood quality, The working group felt that students' surroundings directly affect both their social development and their capacity to focus on the everyday tasks of learning.

Clearly, issues of safety and security on and around the school grounds were up front on many teachers' minds. There is an enormous amount of energy on Chase Street throughout the day and into the night, with as many as one to two dozen young adults hanging out on the sidewalk and most recently, near the school's parking lot. Just to the northwest on the corner of Patterson Park Avenue and Chase Street is a convenience store and a bar that attract still more of the neighborhood's young people. Students who wait outside play on the playground, while young adult males who do not appear to be either parents, or in anyway associated with the operations of the school hang out on the sidewalk near the school, while other young adults hang out across the street, watching passively the activity at Rayner Browne's entrance. One parent volunteer explains that open-air drug dealing is common there.

After school hours, many of the neighborhood residents occupy the school grounds, especially near the front entrance. Typically, they sit on the concrete retaining wall and smash bottles against the side of the building. The full court basketball hoops were removed a few years ago, while playground equipment has been more slowly removed, in an effort to reduce the incentive for young neighborhood residents to occupy the school grounds at night.

View from main entrance to what remains of the basket-ball court and playground after all equipment has been removed

Still, teachers routinely find broken bottles, needles and other objects on the playground and in the playyard behind the building.

Clearly, many people in the neighborhood have not taken ownership of the school. It was not always this way though. Ms. Blake, a special education teacher at the school who has been in the school for over twenty years states, "The neighborhood was better in the past, when the school was first built. People were in here for some time and they took pride in the neighborhood... they would call the police. Many of those people have died or moved and now its not as safe or stable...it was a gradual change over the years."

The custodial staff do what they can every morning before students arrive at school to clean the grounds. It is a never ending battle, but one the custodial staff feels is well worth the effort. Referring to the custodial staff, Ms. Blake remarks, "They are in com-

petition with crime," when it comes to keeping the school grounds safe and clean. According to the parent liaison, as a result of the efforts made by the custodial staff, some in the community have actually begun to take notice of the school's determination to maintain a positive appearance.

Unsatisfactory parking lighting is another issue brought up by the working group and was identified as a high priority. Due to car break-ins, a fence had been put up in the parking lot a few years ago, but teachers still experience threats to their psychological safety at night due to the lack of adequate lighting on the north side of the building leading to the parking lot. Night meetings are scheduled, but according to the principal, a few as possible are scheduled during the Winter months due to the short period of daylight after school hours.
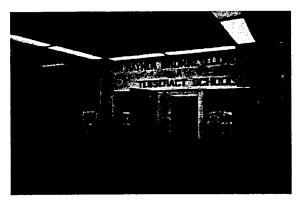
As a first step in responding to the school's concerns over neighborhood quality, the principal, Ms. Grafton, has formed what she describes as "very minor but important" partnerships with Joe's bar located adjacent to the school and the Pride shopping center to her west. She has been aggressive in raising what has historically been dismal parental involvement in the school by hiring a new parent liasion who has strong ties to the surrounding community.

The entrance doors are bright, fresh colors of blue, green, red and orange. The lobby is heavily decorated from floor to ceiling with various signs, announcements, plants, a display/trophy case proudly announcing the school and community's performances, banners, student work, and a welcome mat on a red brick and shiny tile floor that reads "Dr. Rayner Browne Elementary #25 - Home of the Rayner Ravens - Soaring to Higher Levels of Learning."

The design of Rayner Browne's entrance lobby is appropriate considering the potential for intruders into the school from the neighborhood. Like many schools in the Baltimore City Public Schools System, the main entrance is effectively controlled by a buzzer: once an individual is let into the school, he or she must move directly into the main office before moving on to the Commons space. Although the entry sequence into the building seems severe and limiting, the actual experience is much the opposite; a visitor is struck with a positive first impression.

View of entry doors from Main lobby into Commons

Entering the carpeted office reception room, a visitor will find the room to be extremely clean, neat and well organized with several healthy plants in the room

despite the fact that there are no windows. The secretary, Ms. Sherry, is stationed at the desk located immediately next to the door of the lobby. She is an integral player in the management of the school, acting not only as the receptionist, but as a security guard, guide, concierge, and most importantly, a baby-sitter. As Ms. Sherry explains, a major problem with parents is that they do not always pick up their children on time, and sometimes forget altogether. She goes on to say, "Some of the kids will be here until four or five at night — their parents never come!" From the office reception room can be seen the Commons, a space that can only be described as the hub of the school.

Not only does the Commons act as the all too familiar "multi-purpose room" (a cafeteria, an auditorium, a morning meeting space, a large group instructional area and a staff meeting room), due to its proximity to all other places in the school it serves as a social center unifying the entire school. All stairwells, entrances, and instructional areas lead to the Commons. On the first floor for instance, Instructional Pod "A" (containing four instructional areas; First Grade as well as Grades 2, 3 and Special Education) is north of the Commons, the Gymnasium and associated functional spaces located to the west, while the Kindergarten classrooms and Parent Academy are located to the south, and the administrative wing along with the main entrance are located to the east. Both stairs leading to the second floor can be reached as well from the Commons (See floor plan illustrations).

The Commons during morning breakfast

At 8:12 AM a teacher addresses the crowd of students over the microphone mounted on a podium along the wall of the Commons to greet them but also to quiet them down and prepare them for the procedure of lining up by class behind their respective teachers. There appears to be plenty of room for this procedure and in only four minutes, the student body divides up and goes to either the gym or the commons for the Morning Meeting.

The Morning Meeting is a structured activity all Tesseract schools go through in which the school collectively begins the day discussing particular topics related to social skills and development.

As some students file into the gymnasium, they see banners on the walls depicting different emotions like 'happy,' 'sad,' 'love,' 'anger,' etc. A teacher, on this particular day, Ms. Harriman, leads eight students to the front, while eight classes are quietly seated on the floor. Teachers line the walls of the gymnasium. The eight students up front have been chosen today to lead the rest of the assembled student body in the Pledge of Alle-

giance, after which the Assistant Principal talks about pedestrian safety while the students help a discussion about feelings led by Ms. Harriman in which each student says an emotion and what that emotion is like — love, anger, frustration, proud, sorry, lonely, happy, afraid. Finally, one student reads aloud a book about sharing and the morning meeting then comes to a close. The whole event sets the mood for the day and students, along with their teachers, walk to their respective instructional areas.

The Tesseract educational program, of which the Morning Meeting is just one component, is the result of the review and organization of several years of research on the components of elementary education that have been found to work: (a) a Personal Education Plan (PEP) for each student to set goals for learning to be
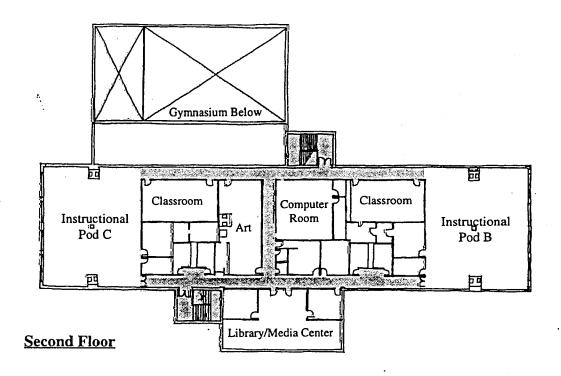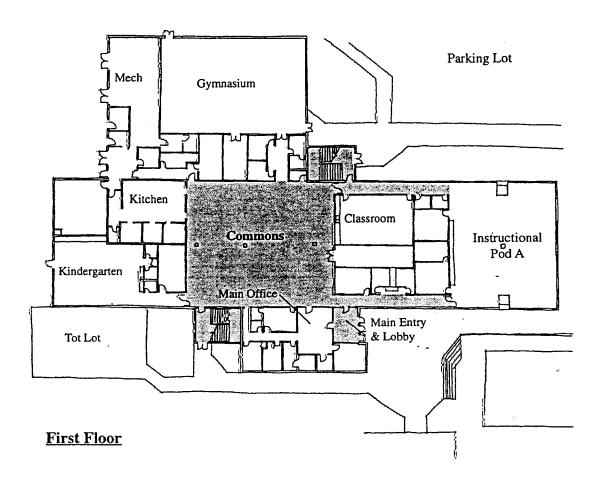
Morning Meeting in the Gymnasium

signed off by parents; (b) staff development meetings held once a week on a variety of topics such as learning modalities and computer training; (c) instructional interns or aides with college degrees (but not necessarily with educational training) to increase the number of adults in the classroom; (d) Tesseract tests to complement standardized tests; (e) new instructional technology — four computers in every classroom and a central computer room using software developed by one of the Alliance partners; (f) learning activity areas and movable furniture; and, (g) increasing parental involvement through the institution of Personal Education Plans, encouraging parental participation in the classroom or on field trips, in PTAs or attendance at school functions. Other innovations brought in by EAI were telephones in classrooms so teachers could contact students' families, increased supplies in the classroom, use of whole language and whole math, the use of a Learning Style Assessment, and customized instruction.

The Tesseract educational program could not find a more sympathetic physical layout in Rayner Browne. Well-defined open space instructional areas with room for activity areas offer the flexibility required to physically implement the program. There are in effect, three main open space instructional areas each containing four classes, with one on the first floor and two on the second floor. On the second floor, the open space instructional areas are effectively separated by a core of self-contained classrooms, a computer room, a media center, two sets of boys and girls toilets and other supplemental instructional areas. The design layout of each instructional "pod" area into four distinct areas is architecturally and structurally defined by a column in the center of the room. Although the original intent of the 2,600 square foot open space design was to foster free movement throughout the entire pod, the division of the pod into four distinct 650 square foot classroom areas has been effective.

The instructional pods are, for the most part, clean and organized with colorful dis-

Second Floor

First Floor
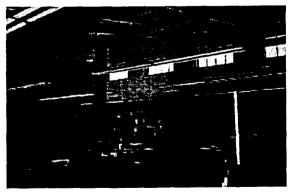
plays that are bright and inspirational. Instructional Area A located on the north end of the first floor provides areas for students to sit on the carpet so they may listen to their teacher read to them. The southwest quad has a popular library "nook" which acts as a small gathering place complete with comfortable chairs, stuffed animals, and colorful games and displays all designed to encourage reading. The quads in this Pod, as in the other two pods, are defined by various pieces of furniture such as four and a half foot high rolling carts with coat hooks on one side, a blank wall surface on the other, as well as similar height bookshelves. Often various objects such as globes, large open books and stuffed animals are placed on top of the bookshelves, not as storage, but as a means of effectively increasing the height of the divider between class areas. Running from east to west is a linear table with four computers, provided by EAI, that effectively doubles as a divider; an efficient use of space important in the open plan arrangement.

Student working groups in Instructional Pod A. Note on the left fully drawn window blinds as a reaction to the threat of intruders.

Clerestory lighting allows some natural daylighting to enter the instructional pod areas, but rarely reaches the work surface.

Built in sink counters located at the center of the Pod provide an ample barrier between chalkboards, and further define the open space.

The physical elements within the pods effectively support what could only be described as an optimal cooperative learning setting. In one particular instructional area, eight students are seated at two tables facing the chalkboard learning from the teacher, four studetns busily working on the computers, five students receiving small group instruction from the teaching assistant, and three students working alone at individual desks. The size of the class, twenty, made this possible, as well as the flexibility and variety of settings offered within this one instructional area.

Although the adaptable layout of instructional areas was not seen as a problem in Rayner Browne, the conflux of problems surrounding lighting and outdoor views were. On the second floor, the ceilings of the instructional areas are pitched to allow for clerestory daylighting although it is rather high and diffuse and does not completely reach work surfaces. The first floor does not have this luxury, instead relying almost solely on fluorescent lighting from a standard two by four

acoustical tile ceiling. Windows on the first floor do not provide much daylight since the frames contain frosted Plexiglas that lets little light in. In addition, the windows are locked for security purposes, and teachers draw the shades to prevent possible intruders from taking an inventory of the classroom before stealing. Teachers claim to have found people in the past suspiciously looking into classroom windows on the first floor during the day. For the working group, this issue of lighting was found to be of moderate priority and one worthy of some further discussion.

"They are already crowded at home and they come here; they want to spread out. They come here to get away from it...I have seen some of the places where they live, and I can understand." [Parent Volunteer]

Neither class size nor the density of instructional space use was felt to be of concern to the working group. In fact, Rayner Browne has ideal class sizes.

Currently, there are no standards for the size of academic learning areas which vary from state to state. However, there is nationally, one organization that has begun to rethink the sizes of educational spaces. In their Guide for School Facility Appraisal, the Council for Educational Facility Planners International (CEFPI) state, "New forms of instruction require greater amounts of space than in the past. Special education, remedial classes, cooperative learning, and community participation all create spatial requirements that differ from earlier periods of education."

CEFPI recommends the following: The "building capacity" of an elementary school (the number of students capable of occupying a school facility) can be measured by taking the total gross square feet of the facility and dividing by 90 GSF/student (90 GSF being a CEFPI recommended number). The recommended gross square footage per student for kindergarten and pre-kindergarten classes are: minimal 30-35 GSF/student, acceptable 36-40 GSF/student, ideal 40-48 GSF/student. The recommended gross square footage per student for elementary classes: minimal 23-27 GSF/student, acceptable 28-30 GSF/student, ideal 31-36 GSF/student.

Taking these standards as a means of assessing the conditions at Rayner Browne, the school building is below its capacity of 399 students at 348 students (at the time of the assessment). Pre-kindergarten and Kindergarten classrooms are 'acceptable' at 38 gross square feet per student. While, first through Fifth Grade classrooms are 'minimal' at 27 gross square feet per student.

Even with the advantages of small class sizes at Rayner Browne, density can be a problem for some students.

Although there was heated debate about the relative merits of open space versus self-contained classroom instruction in Rayner Browne, the working group chose to

prioritize this issue as moderate. Teachers feel on the whole that in open plan instructional areas it is hard to manage student behavior due to noise and distractions from other classes, often with more time being devoted to discipline and classroom management than teaching and learning. Problems include classes walking past others and causing distractions and classes "talking over" others, escalating the noise problem. Noise in the pods was seen as a separate issue and one that also was of moderate priority. The group recognized that these problems could be overcome by effective classroom management techniques by the individual teacher, and that some teachers have yet to fully realize this. Ms. Blake summed up her feelings about open space saying, "It took time to get use to it...we tone down our voices now, we can tell who is not use to open space because they are are loud and distracting...me, I'm adaptable."

Some teachers in the group felt that storage capacity in cabinets under sinks and against the core walls, which were incidently away from their instructional areas, were not enough for the needs of the entire pod. In addition, these same teachers felt that shared storage space is unorganized and overpacked with various materials and books that have not been used in years. The working group agreed that this problem was, however, a low priority that could be resolved by carefully organizing shared storage rooms.

Students may be fairly cooperative in toning down their voices during instruction in their pods, but their behavior during the lunch period is another story. During lunch, the commons room becomes a highly energetic cafeteria that proves to be a true communal gathering place. Several members of the community are involved in managing the lunch period: some students listen to an elderly man from the neighborhood, four mothers help discipline students, the custodian is on hand for any unexpected incidents. After the madness of lunch subsides, the elderly man, the four mothers, two teachers and two custodians converse about the day's events.

"The air conditioning is broken all the time...there is no happy median, either its to hot or too cold." [Special Education Teacher]

Next to issues of neighorhood quality and safety, poor air quality was a constant concern for teachers. Problems with dry air, poor air flow and ventilation associated with the air conditioning system are experienced by many teachers in the school. Ms. Parrimore, a participant in the working group stated, "I'd rather it be a bit cold, then I can always control by what I wear." Some teachers believe strongly that air borne bacteria, or "germs dancing around in the room," is a prime reason for the spread of infections to students and teachers alike. Some teachers have complained in the past of irritated, red and ichy eyes and aggrevated allergies. Unfortunately, air problems are most likely the result of a confluence of other problems. Even with the constant replacement of pumps, filters and heating and cooling coils, the aging mechanical system continues to create problems for occupants no matter how vigilant the facility management team is. Locked windows, in part a response to both operating the air conditioning

system and to safety and security issues, eliminates the opportunity for occupants to control their environment at the source.

Ironically, despite the problems associated with the air conditioning system, the working group was unanimous about the contribution the Johnson Controls facility management employees have made in the school. One of the reasons for this may be the responsiveness of the custodial as well as maintenance repair staff to teacher concerns. A previous custodial team leader, Roger Spearing, developed a customer response form for teachers that has facilitated this positive response. He would place copies of the form in each teacher's box to encourage their feedback on problems that they might have related to the physical environment. The types of problems and concerns that Mr. Spearing and his team have come across include the need for heat and other air quality concerns, keeping bathrooms supplied, setting clocks, repairing running sinks, coaxing Ms. Johnson's uncooperative audio-visual screen, repairing a damaged outlet in Ms. Bennick's room, adjusting legs on a classroom table, replacing duct tape used to conceal computer network wires running along the floor of the computer room that children keep tripping over, fixing a door outside the boys bathroom that is stuck, replacing flickering fluorescent lights in Ms. Henderson's classroom, reserving the VCR for Mr. Jennings, installing a pencil sharpener in Ms. Leadbetters classroom, repairing a broken top drawer of Ms. Hopper's desk, fixing a damaged puzzle rack in Ms. Anger's room, replacing the intercom speaker switch, and repairing a rug at the entrance of Ms. Blackmore's room. Mr. Spearing's contribution to building and maintaining the educational "stage" speaks for itself. One teacher who used Mr. Spearing's customer response form exclaimed, "I am happy to have you as my personal custodian."

As a further measure of the performance of the custodial team, Mr. Spearing developed an evaluation form that began by stating, "In our on-going commitment to improve the quality of our service, we are asking for your suggestions to tell us how we can better respond to your needs and concerns. Our objectives are to improve the manner and ease with which you can communicate your problems, increase the speed of our response, and ensure that each custodial employee you interact with is attentive, professional, and courteous". The principal writing Mr. Spearing stated, "I am very satisfied with the keen eye and sense of duty exhibited by the team leader. He sees a problem and readily takes care of it." One teacher remarked, "My room almost always looks spiffy!!" Another stated, "They are an asset to the school." Some concerns surfaced that have helped the custodial team improve their service. One teacher observesd, "Sometimes [you meet my needs in a timely manner], but it is not always in your control; a problem may have to wait for help or response from your main office (Johnson Controls)". This same teacher conitnued to suggest, "Just letting me know that they (Johnson Controls) are working on the problem or request is very helpful."

FINDINGS & DISCUSSION

The previous section described in some detail the more critical of the twelve (12) distinct environmental quality issues of concern at Dr. Rayner Browne Elementary School identified by the working group (See Appendix A for a complete listing and summary of these issues).

Some of these issues overlap and in some cases, contradict each other. For instance, the desire for natural daylighting, fresh air and outdoor views were often overruled by more critical needs for security from potential intruders, which dictated the locking of first floor windows. To further understand the implications of these issues on the educational process, through the assistance of the working group, issues were categorized by (a) ten attributes of environmental quality, and (b) their potential influence on three broadly defined educational process outcomes: student performance, student social development and teacher instructional performance.

Ten distinguishable attributes of environmental quality have emerged from the intersection of the researchers' findings in Baltimore City Public Schools and what is known from previous research literature. Not only was there a desire to understand the nature of the interaction between the various attributes of environmental quality, but the appraisal of teacher perceptions of the potential influence on the educational process was desired as well. What follows is an analysis of the relationship between these attributes of environmental quality, the issues raised in the working group and their percieved potential impact on the three educational process outcomes.

1. Physical Comfort and Health *refers to the degree to which occupants feel the indoor environment meets your physiological needs with respect to thermal and air quality, illumination, noise and odors.*

- The environmental quality of physical comfort and health was one of the most often discussed qualities of concern for the working group, identified as potentially influencing student performance, social development and teacher performance as evidenced by the discussion of the issue of Poor Air Quality (#2). Poor air flow circulation and ventilation were the main causes of concern for teachers. These conditions may contribute to air borne bacteria, thereby causing many health related problems which may in turn have the potential of influencing performance.

- Problems with Noise in Pods (#6), and Lighting in Pods (#7) were identified by the working group as moderate priorities that could have some additional influence on student and teacher performance.

2. Classroom Adaptability *refers to the degree to which occupants feel that the physical classroom space can be adapted to different and desired educational activities and functions.*

- The findings in Building Functionality which referred to Open Plan versus Self-Contained (#8) are no different in Classroom Adaptability. At no time did the working group distinguish this issue from building functionality, an adaptability attribute at the scale of the school as a whole.

- Additional Storage Space Options (#9) in open space instructional areas was iden tified as a low priority and one that did not directly affect any educational outcomes.

3. Safety & Security *refers to the degree to which occupants feel the school building contributes to protecting occupants from harm, injury, or undue risk.*

- Safety and Security was one of four attributes of environmental quality mentioned the most at Rayner Browne. Three environmental quality issues, namely, Neighborhood Quality (#4), Poor Outdoor Lighting (#1), and Playground Safety (#3) illustrated the school's high priority concern with safety and security issues on the school grounds.

- For the most part, safety and security were not seen as affecting educational outcomes, except for the broader issue of neighborhood quality (#4) which was perceived as clearly influencing the attitudes and attention of students entering the school.

- The attribute of safety and security represented by the issue of poor neighborhood quality was observed by teachers to potentially affect student performance as illustrated by their students' preoccupation with problems at home which takes time away from focused school work.

- Student social development was also perceived by teachers to be affected by poor neighborhood quality as illustrated by in-school fighting; the result of social behavior learned at home or in the community subsequently brought into the school.

4. Building Functionality *refers to the degree to which occupants feel the various places within the school building are functionally compatible with the school's educational programs and activities.*

- Building functionality mirrored the problems of Open Plan versus Self-Con-

tained (#8) with another attribute of environmental quality, that of classroom adaptability. This issue is a moderate priority for the working group.

• Building functionality was seen by teachers as directly influencing both student and teacher performance in Rayner Browne's three open instructional space pods. Visual distractions and noise were the contributing factors most often mentioned in open space problems.

• Although teachers explicitly identified these instructional spaces as a negative influence on their ability to teach their students, many aspects of these pods appeared to postively support the instructional program delivered in those spaces: pods provide well-defined fixed and semi-fixed boundaries between instructional areas and possibilities for various activity nooks and learning areas.

• Another environmental quality issue was categorized as a building functionality issue, ADA accessibility (#10) (ADA: Americans with Disability Act). The working group reasoned that although they did not have any physically disabled students, if they were to have one, accessibility issues might affect that student's ability to use the entire facility, thus affecting that student's performance and social development. In a similar way, they could see theoretically how this issue could affect a physically handicapped teacher's performance as well. The school does not have an elevator, and bathrooms, not unlike most older Baltimore City schools, are currently handicapped inaccessible. This particular issue was deemed a low priority by the working group simply due to the fact that they do not have and historically have not had any physically disabled students use their school, though they recognized the need to provide for that eventuality at some point in time.

5. Aesthetics & Appearance *refers to the degree to which occupants feel the school building is attractive and provoking.*

• Playground Safety (#3) was the only environmental quality concern brought up in which aesthetics and appearance was at issue. As mentioned earlier, playground safety was not seen as influencing any educational outcomes, but it was deemed of high priority to the working group nonetheless.

• Within the interior of the school, Rayner Browne did not have any problems associated with aesthetics and appearance. One of the main reasons for this was that the appearance of the school (i.e., cleanliness, orderliness and character) was seen as a positive quality, influencing all educational outcomes. As data from interviews indicate, many working group teachers felt that the quality of aesthetics and appearance were one of the top three attributes of importance with respect to educational outcomes. As one teacher states, "An appealing school makes [the] school inviting and a place you want to be," while another teacher

adds, "The aesthetics and appearance of a school gives students, parents and outsiders a welcoming atmosphere."

6. Personalization and Ownership *refers to the degree to which occupants feel the school building offers opportunities to create a personal and self-expressive environment and engender a sense of ownership.*

- For many of the same reasons mentioned previously concerning Neighborhood Quality (#4), the environmental quality of personalization and ownership was identified by the working group as related to student performance, social development and teacher performance.

- Evidence of the lack of neighborhood ownership of the school grounds (e.g., high priority issues such as Playground Safety #3, Neighborhood Quality #4) confronts students and teachers alike everyday: garbage, broken bottles, graffitti and other paraphenalia strewn across the school site work against feelings of ownership. Within the school however, teachers and students are capable of personalizing their space and have gained a strong sense of ownership in their school.

- Personalization and ownership qualities of the school are most evident with respect to the moderate priority issue Open Plan versus Self-Contained (#8). Teachers often personalize their instructional areas even though at first glance each area appears to have common features similar to others in the pod. However, as one teacher states, "Our classroom is not just our classroom...we try to make it the students' classroom, with lots of colors..." Within guidelines established by teachers, there is evidence students have opportunities to personalize as well as take ownership in their instructional area.

7. Social Places (Places for Social Interaction) *refers to the degree to which occupants feel that places within the school building provide opportunities for meaningful social exchange and interaction.*

- One key functional feature of Rayner Browne was the centralized location of the Commons, ultimately providing a true community forum. The visitor is drawn into the space directly off the main entrance. The Commons serves as a cafeteria, student meeting area, staff meeting space, community commons, informal social encounter space, as well as a collector of all horizontal and vertical circulation in the entire building. Although not mentioned by the working group, the Commons clearly contributes to the social development of students throughout the day.

- Although the issue of Playground Safety (#3) was not identified during the workgroup, as influencing any educational outcomes, several teachers within the group had previously mentioned the value of the playground in promoting

social development. Part of this discrepancy is due to the high prioritizing of the Playground Safety issue, thereby overshadowing or excluding other, more positive characteristics of the playground.

8. Privacy *refers to the degree to which occupants feel that there are places within the school building which provide opportunities for an individual or a small group to be free from the intrusion of others.*

• Based on discussions concerning the moderate priority issue of Open Plan versus Self-Contained (#8), the environmental quality of privacy was seen as affecting student performance. Some classroom areas within the school provide places such as corners or activity areas, others do not. Several teachers indicated that students are allowed to go anyplace within the classroom, but often only a few choose this option.

• Again, based on similar discussions concerning the issue of Open Plan versus Self-Contained (#8), the environmental quality of privacy was also seen as affecting teacher performance. Teachers do not get privacy in the open plan space, especially from other teachers and classes although opportunities exist: the teachers lounge, where seven or eight teachers might eat lunch together, or their own classrooms during times when students are at lunch.

9. Sensory Stimulation *refers to the degree to which occupants feel the school building provides a stimulating environment for learning that is safe yet challenging.*

• Like other schools in this study, Rayner Browne felt they had succeeded in providing the appropriate level of sensory stimulation for their students.

• The only issue that arose concerning appropriate sensory stimulation was that of the condition of the existing playground (Playground Safety #3) which was not seen as affecting any educational outcomes.

• The short corridors leading to each Pod were for a time during the Fall lacking in student work. This concern raised by the researcher was countered by the working group as a temporary condition all schools go through in the first few months of their operation: it takes time for students to generate work and fill the walls with the outcomes of their projects. As time progressed, the school did become more stimulating and the researcher experienced new visual presentations on each visit.

10. Crowding/Spaciousness *refers to the degree to which occupants feel the school building cannot adequately accommodate the number of students and teaching staff occupying it.*

• No issues relating to the environmental quality attribute of crowding/ spaciousness to educational outcomes were discussed by the working group. Rayner Browne did not have a problem with crowding. Students have ample room to move around within instructional areas in order to gain privacy or to work in small groups. In fact instructional areas were observed in several classrooms as providing an opti

APPENDIX A: ENVIRONMENTAL ISSUES

Issue No.	Issue Title	Issue Description

High Priority Issues

1.	Poor Outdoor Lighting	Outdoor lighting is poor, especially during evening events such as PTO meetings in the winter months. Lighting is poorest along the north side of the building where teachers walk to the parking lot. In addition, there is no lighting on the east side or south side at all.
2.	Poor Air Quality	There are problems with dry air, poor air flow and ventilation experienced by many teachers in the school. Some teachers are aware that air borne bacteria could infect students and teachers. Some teachers have complained of irritated red and itchy eyes and aggravated allergies.
3.	Playground Safety	Although custodians do an excellent job of cleaning up the grounds, glass and needles are still found in the grass and on the playground by students. The problem is ever present. The basketball hoop and the remains of the monkey bars were recently removed to discourage use of the grounds.
4	Concern over Neighborhood Quality	The overall neighborhood quality exerts an overall negative affect on all activities within and around the school. Teachers fear for student safety, and several drug related incidents in the surrounding neighborhood during school hours have reminded them of the need to be vigilant. Crime has seemingly gotten worse around the school -- there are more shootings and strangers are found walking through the parking lot and around the school entrance during the day. Teacher concerns over neighborhood quality are associated with the problems and frustrations they see children bringing into the school.
5	Lack of Adequate Cafeteria Storage	There is a lack of space for storing cafeteria supplies and food. Recently, some storage has been shared with the custodial staff.

Moderate Priority Issues

6.	Noise in Pods	Pod (open plan) teachers regularly complain of noise from other classes. Some classes are required to move past those classes nearest the corridor to get to their instructional areas, thereby disturbing activities. Talking over other pods escalates the noise problem. It was recognized that this is as much a classroom management issue as it is an environmental quality issue.
7.	Lighting in Pods	Lighting in the pods is satisfactory, but could be better. The pods are not always as bright as other areas in the building such as self-contained workrooms and the main office. Lighting on the second floor seems to be too high and diffuse. The opportunities for supplementing artificial lighting with natural daylighting is limited due to the frosted Plexiglas windows and further reduced by the need for curtains on the first floor windows to discourage potential intruders from looking in and inventorying equipment in instructional areas.

8.   Open Plan versus Self-   Teachers feel that in open plan instructional areas it is hard to manage
      Contained   student behavior due to noise and distractions from other classes.
                                   Sometimes more time is devoted to discipline and classroom
                                   management than teaching and learning. This is a source of
                                   frustration for many teachers. Special education students seem to be
                                   most affected by these distractions.

Low Priority Issues

9.   Additional Storage Space   Some teachers felt that cabinets under sinks and against walls are not
      Options   enough for the entire pod. Shared storage space is unorganized and
                                  overpacked with various materials and books that have not been used
                                  in years. Most teachers felt that the problem could be resolved by
                                  carefully organizing shared storage rooms.

10.   ADA Accessibility   There are currently no building codes or ADA regulations that would
                                  require the school to provide disabled accessibility unless a building
                                  experiences major renovation, addition or alteration. However, the
                                  issue of providing access is of concern to the school. The school has
                                  no means of vertical transportation for the disabled, nor does it
                                  provide any appropriate bathroom stalls.

The Environmental Quality Assessment Project
Baltimore City Public Schools

Case Study Report:
Coldstream Park Elementary School #31

PROJECT OVERVIEW

This report documents specific environmental quality concerns of one of five elementary schools in the Baltimore City Pubic Schools. This report serves not only as a record of the environmental quality concerns themselves, but also describes the assessment process within which these concerns have arisen.

This section provides an summary of the project objectives, problem and approach, and process and procedures of the Baltimore Environmental Quality Assessment Project.

Objectives

The objectives of the Baltimore Environmental Quality Assessment Project project were to:

- develop an occupant-driven environmental quality assessment process through which environmental quality concerns can be creatively identified, addressed and influenced by school occupants themselves.

- assess environmental quality from the perspective of the experiences of students, teachers, staff, administrators, and parent volunteers in each of five Baltimore City Public Schools that chose to participate in this project;

- understand how environmental quality may or may not contribute to the educational process in each school with respect to Student Academic Performance, Student Social Development, and Teacher Instructional Performance; and,

- understand the role of facility management in maintaining and improving environmental quality.

For Coldstream Park Elementary School #31, this report documents specific aspects of environmental quality of concern to the school. The assessment process was not conducted to judge the final worth or merit of the school as it relates to environmental quality. Rather, the intent of this project was to provide information useful for improving the environmental qualities of the school, especially those that may have some impact on the effectiveness of the educational process. It is the hope of all involved, that the results of this study be considered an affirmative step toward improving environmental quality at Coldstream Park.

Each school case study investigation followed a research process in which a selected number of teachers and administrators participated in actively clarifying the scope of the project, identifying and prioritizing environmental quality problems, issues and concerns, and formulating strategies for addressing these concerns.

The report that follows briefly summarizes the project activities and assessment process conducted within a seven month period between August, 1995 and February, 1996. Any mention of individual names are fictitious to protect the anonymity of participants in the study.

In August of 1995, Coldstream Park Elementary agreed to participate in the Environmental Quality Assessment Project.

During a visit on September 22, 1995, a physical inventory and preliminary walk-through of Coldstream Park was conducted, along with interviews of the principal and the head custodian.
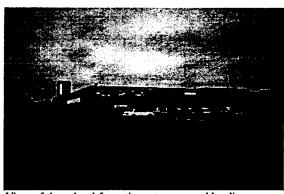
During a visit on October 26, 1995, a full day of observation was conducted which included behavior mapping, informal and formal interviews with teachers and photographic documentation of the school-in-use. In addition, 45-minute semi-structured interviews were conducted with three classroom teachers and one instructional specialist. Each teacher was asked to fill out a teacher survey-worksheet, as well as to administer a student survey.

Prior to the final visit on December 14, 1995, information gathered from the previous visit was tallied and organized into a series of potential environmental quality issues to be discussed during the workshop. Workshop materials included a list of all issues, floor plans showing the location of issues throughout the building, a presentation board containing photographs of problem areas. Also included were individual issue cards and a blank matrix worksheet for ranking issues by priority (high, moderate, low, none) and the potential impact, if any, on one of three educational outcomes (student performance, social development, teacher performance). The workshop, with a working group of four teachers and the assistant principal, lasted a total of 90 minutes.

The following Spring, a teacher survey was administered to gather further information regarding teacher perceptions of environmental quality.

A CAPABLE SCHOOL

"Capable" Coldstream Park Elementary School, constructed and occupied in 1979 serves parts of the Coldstream, Homestead and Montedello neighborhoods, northeast of the downtown business district by two miles, located just east of Greenmount Avenue (Route 45) on the corner of Exeter Hall Street and Loch Raven Road. The school is sited on the top of a hill it shares with an athletic stadium used by the popular "Baltimore Stallions," a semi-pro football team. Just north of the school is a fenced-in storage facility owned by the City of Baltimore.

View of the school from the entrance road leading up ot the parking lot.

Coldstream Park got its prefaced name "Capable" after the arrival of its new prinicipal Ms. Windsor, who has a reputation of poetically embellishing the names of the schools she has managed by adding an adjective to describe the character or personality of the school. Several names were voted on and "Capable" was the winner. Although Ms. Windsor has of this year retired from educational service, her assistant prinicipal Ms. Souter has been more than capable in providing continuity in a transition period for the school. The name has remained, becoming part of the historical fabric of the school.
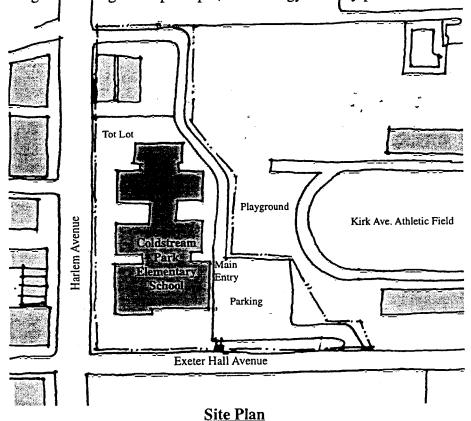
Although the school has had its problems with parental involvement, student achievement and student attendance, there are signs that some of these problems might be averted. Coldstream Park, like many schools in the Baltimore City Public Schools, has adopted a site-based management structure and employs a school improvement team that "allows key stakeholders the opportunity to collaborate on the mission, philosophy, goals, and strategies for improved management, teaching, and learning at the school" (Excerpt from school handbook).

One of the SIT's responsibilities is to develop a school improvement action plan. The most recent action plan calls for increasing parental involvement through a series of Parent Community Appreciation Events and instituting an adult basic education program among other activities. Parental involvement that has never been very high at Coldstream Park is now getting better. According to Ms. Windsor, "We have a new parent liaison who has been successful...we just had a successful Back to School Night social...and at the last PTA meeting the auditorium was filled!"

Attendance has also been historically low, but the school is hopeful this will change this year. One particular event held in the school's auditorium in October, "Attendance Blast Off!" had an intended goal of promoting excellent attendance in every student. Thus far, it has not met expected goals even though a communications company in the area participated in the event, promising to sponsor a Halloween party for students with perfect attendance.

Organizationally, Coldstream Park is a Pre-K through Grade 5 structure with a current enrollment of 577 that has risen from 529 in the beginning of the year. Class sizes range anywhere from 17 in Kindergarten to as many as 37 in a two Third Grade classes. The school consists of 20 instructional teaching staff, 11 resource staff (with an additional 5 positions presently vacant), four administrative and clerical staff, two cafeteria staff and two custodial staff members. Coldstream Park has also been able to obtain a Parent Liaison who currently works with 7 parent volunteer aids.

The school practices cooperative learning and has implemented the strategies advocated in the Dimensions of Learning philosophy. Other instructional program offerings include Compensatory Education, Title I, Special Education, Writing to Read Lab and the STARS Science Program. The school consists of entirely self-contained classrooms some of which have the capacity to accommodate two classes. In essence, many classrooms have the ability to be opened up into a larger instructional space for team teaching, although according to the principal, this strategy is rarely practiced.

Site Plan

A DAY AT THE SCHOOL

Site Plan

At about 8:00 AM considerable activity begins in front of the school as busses, cars and parents fill the drop off lane in front of the school. The one-way traffic pattern of the site seems to cause a traffic jam and coincidentally, a potentially dangerous atmosphere for students.

The school site, although in the center of several residential neighborhoods, is isolated on a hill, providing for many teachers a sense of security from the perceived dangers of the neighborhood: open-air drug dealing and crime. However, the school is not completely immune from these problems. Parking lot safety is a continuing concern for teachers. Staff cars are regularly broken into. Although there is a security camera, it has not been functioning, and there is an absence of lighting on both sides of the building out to the parking lot.

However, with these problems in mind, one teacher, Ms. Franklin still explores the neighborhood with her class, stating, "It's safe enough to take my students on walks through the neighborhood to visit the post office, or the cable company, or Mc Donald's...I still feel safe."

Students standing patiently in line for their teachers to receive them, go directly into their "wings" of the school. They either enter through the main doors, or go through one of the four other entrances along the east wall of the school. This proves to be a very effective means of bringing in over five hundred students at one time. During the morning arrivals, the principal stands outside the office greeting students, parents and visitors alike.

The School Song "Lift Every Voice" are performed by Ms. Terry's class in the Main Office over the school address system

School begins at 8:30 AM where opening exercises and classroom routines are completed. Today, the Pledge of Allegiance, the Student Pledge and the School Song "Lift Every Voice" are performed by Ms. Terry's class. They all stand around the microphone in the main office and go through the ritual without a hitch; they know all the songs by heart. One responsible young 4th Grade girl mans the phones while other administrators are occupied with the morning events.

One of the most inviting aspects of Capable Coldstream is the experience of walking into the main lobby. The architectural design of the lobby in combination with the school's decorative welcoming signage and displays creates a successful communal place for visitors and occupants alike.

In the center of the lobby is a banner sign welcoming everyone to Capable Coldstream Park. The walls and ceilings are full of colorful and inspiring seasonal decorations of pumpkins and Fall leaves (Halloween is only a few days away), and displays including a series of student work entitled "A Place Called Home," a banner that states "Let's all PITCH IN to make our school a better place," and a wall display that insists, "It takes a whole village to raise a child, Join Us at "Capable" Coldstream Park." Off the 20 foot wide main lobby to the left is the cafeteria/ auditorium. Due to continuous use, the divider partition between the cafeteria and the auditorium is in functional disrepair and in need of replacement. The doors to each space are always wide open, providing a strong
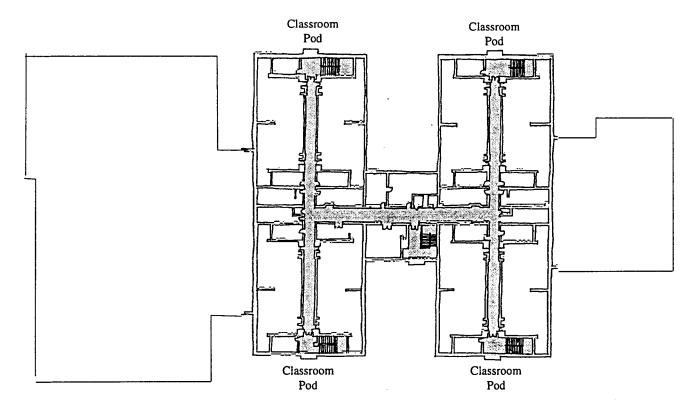
Main lobby decorations and displays
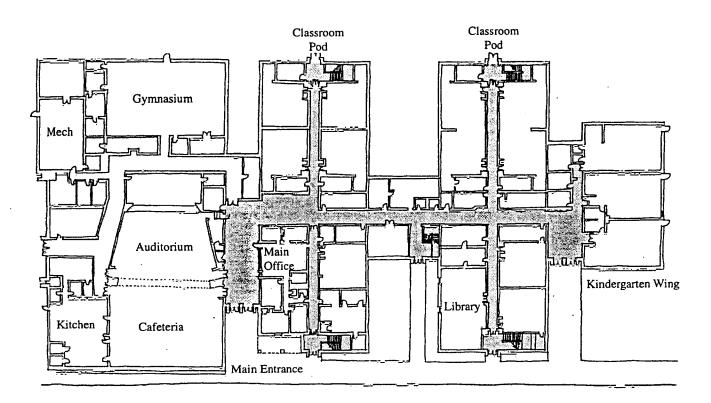
feeling of openness and connection between all of these spaces. To the right is the main office with full height vision glass allowing for clean visibility .

Getting from the lobby to the various classes can be difficult for parents and visitors. When attempting to explain how they find their way around the school, one teacher, speaking for the working group explained, "This is a complicated building to first find your way around...each hall is very, very similar at first, we think of a Big "H", then its OK."

On the first floor, attached to the south of this two story "H" building are all the larger assembly spaces for the school: the main entrance lobby, the cafeteria and kitchen, the auditorium and the gymnasium. At the north end of the long central corridor, attached to this core "H" building resides the kindergarten wing which contains three self-contained kindergarten classrooms with their own entrance and lobby. The two story "H" classroom building itself accommodates all the instructional spaces from Grades Pre-K through 5th. The first floor houses the administrative offices and computer room, and four self-contained classrooms, all special education classes. Music, art and the library share another wing, while the opposite wing contains two modified open instructional areas, or pods, that are occupied by four 1st grade classes. To help with wayfinding, directional signage is provided at the juncture of the pod corridors directly off the main

Classroom
Pod

Classroom
Pod

Classroom
Pod

Classroom
Pod

Second Floor Plan

Gymnasium

Mech

Classroom
Pod

Classroom
Pod

Auditorium

Main
Office

Kindergarten Wing

Kitchen   Cafeteria

Library

Main Entrance

First Floor Plan   Main Entrance

corridor. Signage is accurate, but tends to blend into the walls. To soften the long main corridor, philodendron plants are hung from the 2 x 4 acoustical ceiling tile system, and managed by a student Plant Brigade. The entire first floor covers 60,000 square feet, with 22,000 square feet of instructional space.

The second floor of the "H" contains four wings, each with two similar modified open instructional areas (of 1,800 square feet each) occupied by either one or two classes. Wings contain two 4th Grade classes, two 3rd Grade classes, two 4/5th Grade combination classes and a 5th Grade class, and finally, three 2nd Grade classes and one special education class. In at least five cases on the second floor, single classes are occupying instructional space originally intended for two classes. Finally, the center of the "H" contains various supplemental instructional areas, storage, restrooms and a main stair. The entire second floor covers 20,000 square feet, with 14,400 square feet of instructional space.

Currently, there are no standards for the size of academic learning areas which vary from state to state. However, there is nationally, one organization that has begun to rethink the sizes of educational spaces. In their Guide for School Facility Appraisal, the Council for Educational Facility Planners International (CEFPI) state, "New forms of instruction require greater amounts of space than in the past. Special education, remedial classes, cooperative learning, and community participation all create spatial requirements that differ from earlier periods of education."

CEFPI recommends the following: The "building capacity" of an elementary school (the number of students capable of occupying a school facility) can be measured by taking the total gross square feet of the facility and dividing by 90 GSF/student (90 GSF being a CEFPI recommended number). The recommended gross square footage per student for kindergarten and pre-kindergarten classes are: minimal 30-35 GSF/student, acceptable 36-40 GSF/student, ideal 40-48 GSF/student. The recommended gross square footage per student for elementary classes: minimal 23-27 GSF/student, acceptable 28-30 GSF/student, ideal 31-36 GSF/student.

Taking these standards as a means of assessing the conditions at Coldstream Park, the school building is below its capacity of 855 students at 577 students (at the time of the assessment). Pre-kindergarten and Kindergarten classrooms are 'ideal' at 55 gross square feet per student. In addition, the First through Fifth Grade classrooms are 'ideal' at 31 gross square feet per student.

Not only do students enter the main entrance lobby, an entrance in the center of the "H" building is opened, as well as the kindergarten wing. Although multiple points of entry are effective in reducing bottlenecks at the main entrance and lobby, it does pose a security problem in that more entrances must be monitored for intruders. Most of the concern over intruders comes from teachers in the Kindercourt Wing where the entrance is often propped open in part due to people not completely closing the doors but also due

to improperly functioning door closers.

The security issue has unfortunately affected the main entry. Although it has been unlocked and welcoming for visitors in the past, due to a series of recent daytime intruder incidents, the maintenance staff recently installed a buzzer system like many other schools have in Baltimore City.
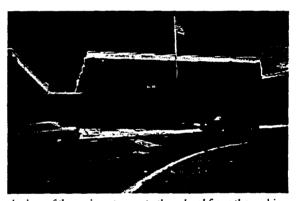
Ms. Franklin, a special education teacher on the first floor described a recent robbery incident that had occurred in her classroom, over 150 feet from the main entrance: "A person came in early in the morning and took tape recorder and packed it in a little tote bag and exited the room with it. Our room was in disarray and we had to clean it up. The students told everyone they came in contact with what had happened, including their parents . . .they were very aware of it."

"We had a Code 31 the other day, and they [her students] saw me get up and lock the door, and they asked 'what does that mean?...why [did] you lock the door?,' and I said, Code 31 means to lock the door [because] there may be an unauthorized person who has entered the building." [Special Education Teacher]

A view of the main entrance to the school from the parking lot. The school doors remained open until this Fall when a series of thefts occurred. Now a buzzer has been installed.

Teachers in the working group are well aware of the implications of safety and security problems on the ability of students to focus on learning. Due to recent incidents the custodian has established a new policy to lock the main entrance doors very soon after classes start and again directly after dismissal.

Corridors leading to classroom pods are long and difficult to fill with a dense array of displays, although displays that are up are impressive and pleasant. There are no dropped ceilings on the second floor creating rather uncomfortably tall corridors. Mechanical ducts, although painted white like the structural concrete roof above still are not attractive to look at. Added to this are hanging fluorescent

Coldstream's corridors can be long and disorienting even with wayfinding signs, colorful wall displays and handing plants.

tube lighting that create an uneven glare on wall and floor surfaces. Teachers and students have managed to create visual displays and provide hanging plants that offer distraction from these more sterile architectural features of the corridors. One wonders why an acoustical lay-in ceiling was not provided on the second floor as it was on the first.

Creating and maintaining the various corridor displays throughout the school is one of Ms. Chaney's tasks. A supplemental teacher, Ms. Chaney works with groups of students in creating what she calls "changes of scenery" each month. Students come up to her all the time and say, "Oh, look, look, I did this right here!" She proudly describes a time when one student caught another student ripping at the corner of an Easter display and scolded him for doing so explaining that he should be respectful of the work of others.
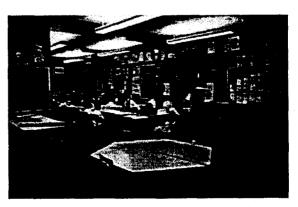
On the second floor of Capable Coldstream their are four separate wings as described by the "H" building layout. Each wing contains two semi-open pods each of approximately 1,800 square feet. Each pod originally was designed for a team teaching educational model where two teachers shared a larger room, a double room, that could be instructionally reconfigured in any number of ways.

In all classrooms on the second floor and in a few on the first floor, a partial wall serves to divide the larger pod into two distinct classroom areas. When two classes share a pod, they almost always create a barrier between each other of movable partitions: chalkboards, A/V tables, bookshelves; anything that forms a barrier. In effect, teachers choose to conduct their instructional activities in as self-contained a space as possible. Some classes continue to maintain a row and column desk arrangement, evidence of a more traditional layout, not indicative of the ideals of cooperative learning.

Team teaching is not being practiced, so the advantage of the larger space is not being fully realized and teachers are instead experiencing the standard problems of conducting large group instruction in an open plan space. Even though teachers are surrounded by full walls or partitions on three sides and half a wall on the fourth (75% + 12.5% = 87.5% enclosed, not accounting for movable partition barriers), they still experience problems with noise and distraction from the other class in the pod.

"We are always aware of the movement of children and even when the other class is being thoughtful, distractions are always there...we are always concerned about noise issues." [Fifth Grade Teacher]   •

Many classroom pods are occupied by only one class providing more than enough space.

Ms. Thompson, a teacher on the second floor, does not see distractions as a big problem since it is inevitably something that can be dealt with through classroom management techniques. In fact, the working group, during the workshop process, surprisingly did not even include it as an environmental issue that needed to be addressed. In an attempt to manage the distraction problem, Ms. Thompson explains, "Sometimes I will pull children away from the common wall to not disturb the other class," she continues, "We try to keep movement to a minimum, moving in small groups to reduce the noise from the banging desks." Ironically, one of the central defining features of the cooperative learning philosophy is free movement from one activity area to another. Although teachers did not explicitly mention the implications of the current classroom layout, it is possible the present configuration of classes and classroom management techniques may to some degree be limiting their instructional effectiveness.

This shared space is only a problem in three of the pods on the second floor containing six classes in total. The other five pods contain only one class each: two 3rd Grade classes, two 4th Grade classes, and one 5th Grade class. Each of these classes use these pods to differing levels of effectiveness. Most classes occupy only the central space with a grouping of desks straddling the two differentiated areas, while one class uses only one side to the exclusion of the other. In most cases, evidence of well-defined activity pockets were not readily apparent.

In the final analysis, some classes have more than enough space, while other classes are tightly sharing space; there seems to be no happy median. When possible the principal, Ms. Windsor has assigned larger classes to occupy an entire pod; this seems to be the most equitable strategy in the short term. In addition, as the principal emphasizes, demographic shifts might fill up these classrooms as they once did a few years ago. Also, Ms. Windsor reiterates that instead of focusing on the problem, her teachers have been able to focus on being more resourceful in working constructively with the spaces that they do have. Her observation was borne out in the fact that teachers did not even see classroom adaptability as a problem.

There were, however, issues beyond noise and distraction and classroom layout that teachers appeared to be more concerned about: adapting their classrooms to future technologies, replacing carpeting, and issues concerning thermal control.

Some teachers in the working group felt that three electrical outlets per room were not enough and that there will be a future need for special telecommunications outlets to make the classroom adaptable in anticipation of computers (recently twelve computers were donated for classroom use). Unfortunately, just a few years ago, a cable wiring project had started and stopped without being completed.

The carpeting in most classrooms is over a decade or more old, is lifting up in spots, shows a multitude of stains, and even after cleaning, often emits odors. Carpeting is

most critically a problem in the pre-kindergarten and kindergarten classrooms. As one Kindergarten teacher clarified, "We spend most of our time on the floor. Children often get sick on the floor and the carpeting needs to be cleaned much more often than in upper grade levels...so, its a high priority for us."

Probably one of the most critical problems for teachers in the working group was thermal control. Some teachers, describing how they cope with thermal problems state, "We take the law in our own hands", by using a small wrench to manually turn on and off the unit ventilators in their rooms. As one teacher playfully boasts, "If I'm uncomfortable, I can flip a switch." To further control the air quality of their rooms teachers often open their windows to provide fresh air. Although some teachers have a perceived control over their thermal state of the classrooms, others clearly do not.

"When I came into the boiler room, the flames from the boiler were coming up so high, I thought for sure it was going to blow!" [School Custodian]

As one extreme case illustrates, thermal control is a high priority to teachers in this school. The school's custodian describes a winter morning in the recent past when a teacher, upset by the cool temperatures in her classroom, learned how to get into the boiler room and turn on the boiler. The obvious problem is that some classroom unit ventilators are unfortunately more difficult to control than others.

A teacher describing a problem experienced by her fellow teacher states, "In Ms. Terry's room you cannot breath in her room its so hot." Another teacher exclaimed, "I came in the morning to my room and it was so hot I touched the top of my record player and it was warm." Another teacher expressing her frustration, remarked, "All day I'm turning the heat on and off... all day, on and off, on and off..."

During one particular week in the winter, Ms. McCullen, a kindergarten teacher first could not at first get enough heat in her room, then after some repair work, found she could not turn the heat off when she wanted. Ms. McCullen explains, "We had no heat the other day so we had to go to another room...and then yesterday it was hot and I was told don't turn the heat off anymore because if you turn it off it ain't going to work, so now we have our windows all the way up." Ms. Windsor, the principal, remarking on the abundance of thermal control problems at the school told a short story about how the school engineer came in one day this last year and asked to have his work performance rated. Ms. Windsor simply stated, "We have had so many complaints, how can I rate you?" Clearly, this is a problem that has everyone, including the engineer, frustrated.

For Ms. McCullen, this is not the only environmental problem she has had to face in the kindergarten wing. The Kindercourt playground located behind the school to the west has not been used other than for semi-annual cook-outs due to its perception by teachers as being an unsafe outdoor area.

The blacktopped playground located west of the Kindergarten Wing stands silently abandoned. The playground equipment has long since been destroyed. All that remains of the playground, other than the cracked blacktop surface are remnants of the fence surrounding the playground. Although it has been completely removed, the fence door and the posts have amusingly remained. Adding to the sense of isolation in the playground is that there is a lack of direct visibility to the playground from the classrooms.

Drug paraphernalia and broken glass is found routinely by custodians in both the playground area and the surrounding grass play areas. Even though the kindergarten class does have the option of using the open field across from the driveway in front of the school, the grassed location directly north of the kindergarten wing would be a prime location for a new playground due in part to its direct visual and physical proximity to all three kindergarten classrooms.

Even with the problems surrounding the upkeep of the grounds, teachers agreed that the siting of the building provided many amenities that other city schools do not have. As Ms. Thompson states, "Even though your in the heart of the city, due to

The playground has become completely unusable
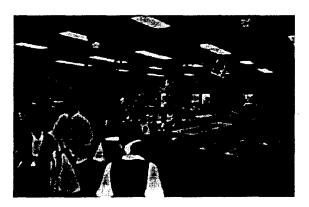
the siting of the building you have open space which I think is kind of nice...the track gives children some real freedom to move about that is far from a busy street."

The upkeep of grounds has been a reoccurring issue for the school: the grass is not regularly mowed, and garbage has collected along the fence lines of the school property. As the prinicipal explains, the responsibility for the grounds upkeep belongs to Baltimore City, and is not contractually a school task. However, n the desire to maintain the grounds to a minimum level of quality, the school custodian has unofficially assumed this task.

The custodian, defending his position with regard to the upkeep of the grounds explains that he has lost a substantial amount of custodial assistance as a result of recent budget cuts across the district. Five custodians used to work at this school, now he shares all custodial work with one other full-time and one part-time position worker. To graphically illustrate the nature of the problem, he explains, "We used to fill a large high school auditorium with custodians, now they can all fit in my smaller elementary auditorium that holds 340." From his count, that amounts to approximately 340 custodians for over 177 schools within the district, or just under two full custodians per school on average. In the custodian's defense, the prinicipal, Ms. Windsor remarks that the facilities staff are ". . .doing an excellent job considering the small number of staff that we have," adding, "They are overworked." In addition, the working group agreed with the

principal that the interior of the building itself is clean, inviting, and well maintained. As one teacher comments, ". . . looks well for the most part...the inside of the building? I would invite the President over!"

During lunch periods, the cafeteria becomes a noisy and exciting social place. Students, no longer "contained" in classrooms can let off a little steam while they eat their lunches. They sit on standard sixteen foot collapsible tables, the ceiling is full of hanging Rhododendron plants,

The Cafeteria: an exciting social place

shiny cardboard stars, and various cartoon characters from Snow White and the Seven Dwarfs. Teachers during this period of the day get their break from their students as well by retreating in shifts to the Teachers' Lounge.

Although of only a moderate priority, the working group felt that the teachers lounge "could be more inviting" and currently "is not the kind of place teachers can go to relax or unwind" during lunch breaks. Thewood framed couch is damaged and in need of repair, additional seating and table furniture is needed, and the room needs to be better cleaned, organized and managed. The principal agreed with the teachers on the problems associated with the Teachers' Lounge, although adding that teachers need to take more care to keep the lounge clean during their shift.

As students from the kindergarten wing hike back to class from the cafeteria, one can see them fowing small blue directional arrows taped to the floor leading to their respective rooms. The teachers explain that the directional arrows promote orderly two way lines in order to minimize running into opposite traffic which is often a problem during the first weeks of school, after which they get more accustomed to the routine. Students are quiet and walk in lines with few deviant problems. These lines, teachers explain, provide a cue to students reminding them of the accepted behavior in the corridor even when the teacher is not present.

Quite unlike the lockstep behavior patterns encouraged in the corridors, students are provided ample opportunities to personally express themselves and take ownership in their school. As mentioned earlier, the Plant Brigade offers an opportunity for students to not only learn how to care for plants, but also to participate in making Capable Coldstream both appealing and welcoming.

"I try to make it personal by taking snapshots of each child and putting them on the board alongside a statement of what they want to do with their future, what they want to strive for to pick up their self-esteem and motivate them."

[Special Education Teacher]

Within the classroom, Ms. Franklin tries to give her students an opportunity to personalize their space. She doesn't stop at posting photographs; to give them a sense of ownership beyond their own classroom, Ms. Franklin claims, "We extend our work not only in our classrooms but we bring it out into the hall and we feel proud about it and we share it."

As students begin leaving the building immediately after dismissal, a small team of student crossing guards, or "Safeties" as they are called, station themselves at each of the corridor intersections to make sure students are orderly and are not running through the building. The Safeties take their job very seriously and consider it a privilege.
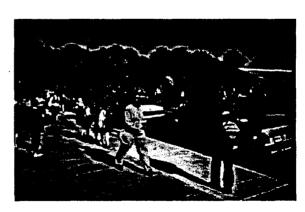
Student crossing guards stand at ease as they prepare for dismissal. Their job is to insure students exit safely from the building

Directing auto traffic is a constant concern for the principal. In the past, parents would drive up the back exit causing traffic problems. This was resolved by requiring all traffic to enter and exit the site from Exeter Hall Street; even though the sign at the entrance still reads "Entrance Only". The drive-through lane that runs along the front of the school is closed off to parents and visitors during dismissal in order to avoid any potential cross-traffic safety problems. This policy is reinforced by the use of student crossing guards and orange cone markers, however, parents still routinely disregard these signs increasing the potential for accidents.

Students outside the main entrance at dismissal

Students begin the long process of dismissal in which each class is escorted from their classrooms to the outdoors where parents are anxiously waiting. Some younger students, fresh from a trip to the neighborhood pumpkin patch earlier in the day, emerge joyfully from the school entrance doors with decorated pumpkins in hand ready to show their parents.

FINDINGS & DISCUSSION

The previous section describes in some detail the more critical of the twelve (12) distinct environmental quality issues of concern at Coldstream Park Elementary School identified by the working group (See Appendix A for a complete listing and summary of these issues).

Some of these issues overlap and in some cases, contradict each other. For instance, the desire for natural daylighting, fresh air and outdoor views were often overruled by more critical needs for security from potential intruders, which dictated the locking of first floor windows. To further understand the implications of these issues on the educational process, through the assistance of the working group, issues were categorized by (a) ten attributes of environmental quality, and (b) their potential influence on three broadly defined educational process outcomes: student performance, student social development and teacher instructional performance.

Ten distinguishable attributes of environmental quality have emerged from the intersection of the researchers' findings in Baltimore City Public Schools and what is known from previous research literature. Not only was there a desire to understand the nature of the interaction between the various attributes of environmental quality, but the appraisal of teacher perceptions of the potential influence on the educational process was desired as well. What follows is an analysis of the relationship between these attributes of environmental quality, the issues raised in the working group and their perceived potential impact on the three educational process outcomes.

1. Physical Comfort and Health *refers to the degree to which occupants feel the indoor environment meets occupants' physiological needs with respect to thermal and air quality, illumination, noise and odors.*

- After Safety and Security, physical comfort and health was the most frequently discussed attribute of environmental quality for the working group. The two issues associated with this attribute were Old Carpeting (#5) and Thermal Comfort (#6) both identified as high priorities.

- Old Carpeting (#5) was seen as potentially affecting student performance in that it may be a contributing factor, primarily for Kindergartners, of various health problems.

- Thermal Comfort (#6) was seen as one of the most critical problems in the

school. The working group believes thermal comfort may potentially affect all three educational outcomes; student performance, social development and teacher performance, by adversely influencing both student and teacher behavior, attitudes, mood and health.

2. Classroom Adaptability *refers to the degree to which occupants feel that the physical classroom space can be adapted to different and desired educational activities and functions.*

- Classroom adaptability was also not a major concern for the working group other than some low priority concerns for Additional Electrical Outlets (#12) which was seen as being a factor in influencing opportunities for both student and teacher performance.

3. Safety & Security *refers to the degree to which occupants feel the school building contributes to protecting occupants from harm, injury, or undue risk.*

- Safety and Security was by far the most often mentioned environmental quality of concern for the working group. Four issues were of high priority: Multiple Points of Entry (#1), Unsafe Kindergarten Playground (#2), Cross Traffic Safety (#3), and Emergency Lighting in the Stairwells (#7), while one issue, Upkeep of Grounds (#8) was of moderate priority.

- The working group felt that Multiple Points of Entry (#1) may simultaneously affect student performance, social development, and teacher performance in that experiences brought into school by students and teachers could adversely affect their ability to focus on the tasks of learning and teaching.

- The Unsafe Kindergarten Playground (#2) issue was seen as potentially affecting social development of students adversely through the limited opportunities for safe places to play.

4. Building Functionality *refers to the degree to which occupants feel the various places within the school building are functionally compatible with the school's educational programs and activities.*

- There were few building functionality issues of concern to the working group. ADA Accessibility (#10) and the Cafeteria/Auditorium Partition (#11) were of low priority, while concerns over the Teachers' Lounge (#9) were of moderate priority.

- ADA Accessibility (#10) was seen as possibly affecting a disabled student's social development if they were not able to participate in all of the activities of the school due to lack of access.

5. Aesthetics & Appearance *refers to the degree to which occupants feel the school*

building is attractive and provoking.

- Issues of aesthetics and appearance were the third most cited set of concerns for the working group: two are of high priority, Old Carpeting (#5), Unsafe Kindergarten Playground (#2) and one of moderate priority Upkeep of Grounds (#8).

- Aesthetics and appearance were most associated with potentially influencing social development as illustrated by the issues of Unsafe Kindergarten Playground (#2) and Upkeep of Grounds (#8).

6. Personalization and Ownership *refers to the degree to which occupants feel the school building offers opportunities to create a personal and self-expressive environment and engender a sense of ownership.*

- Unsafe Kindergarten Playground (#2) illustrated the lack of ownership that some segments of the community have taken with the school grounds: the grounds are routinely trashed and the playground's fencing has been systematically stolen.

- Within the school, teachers provide many opportunities for students to personalize their classrooms by displaying student work, and take ownership of their school through participation in the Safeties, Plant Brigade, and other school service-related tasks.

7. Social Places (Places for Social Interaction) *refers to the degree to which occupants feel that places within the school building provide opportunities for meaningful social exchange and interaction.*

- Coldstream Park has several positive social places all arranged around the main entrance and lobby that effectively demonstrate the spirited personality of the school.

- Some places of concern to the working group in terms of social interaction, were the high priority issue of Unsafe Kindergarten Playground (#2) seen as affecting student social development, and the low priority concern with the Teachers' Lounge (#9).

8. Privacy *refers to the degree to which occupants feel that there are places within the school building which provide opportunities for an individual or a small group to be free from the intrusion of others.*

- The issue of privacy was not of main concern to the working group. The large building capacity appears to allow for plenty of opportunities for students and teachers to find places to get away when needed. Many classrooms, clearly intended for use by two full-size classes, are currently occupied by only one

class, thereby offering many opportunities for getting away from the group.

9. Sensory Stimulation *refers to the degree to which occupants feel the school building provides a stimulating environment for learning that is safe yet challenging.*

- Unsafe Kindergarten Playground (#2) was the only issue that was seen as not providing the necessary sensory stimulation for students. Within the school building, the working group was satisfied with the quality of sensory stimulation.

10. Crowding/Spaciousness *refers to the degree to which occupants feel the school building cannot adequately accommodate the number of students and teaching staff occupying it.*

- Crowding was not perceived as a problem for the working group, despite the fact that several 3rd Grade classes reached 37 students, a 4th/5th combination class was at 36 students, and several Kindergarten classes consisted of as many as 35 students.

- One factor within the school contributing to a sense of spaciousness is the layout of wings on each floor, creating smaller groupings of classes. Additionally, two wings on the second floor, capable of supporting four classes are occupied by only two classes, while a third wing is occupied by three classes. Demographic changes, evident in the large class sizes of 3rd Grades and Kindergarten classes may change this configuration of classes in the following years.

APPENDIX A: ENVIRONMENTAL ISSUES

Issue No.	Issue Title	Issue Description

<u>High Priority Issues</u>

1.	Multiple Points of Entry	Although multiple points of entry have a positive impact on reducing bottlenecks at the main entry and lobby, it also poses a security problem in that more entrances must be monitored for intruders. Most of the concern over intruders comes from teachers in the Kindercourt Wing where the entrance is often propped open due in part to people not completely closing the doors and also to improperly functioning door closers.
		In addition, although the main entry has been unlocked and welcoming for visitors, recently a buzzer system had to be installed like many other schools in BCPS due to a series of recent daytime intruder incidents including one incident in which A/V equipment had been taken from a classroom.
2.	Unsafe Kindercourt Playground	The Kindercourt playground has not been used other than for semi-annual cook-outs due to its perception by teachers as being an unsafe outdoor area. Playground equipment is broken, fencing has been damaged or stolen, there is a lack of direct visibility of the playground from within the school, and drug paraphernalia and broken glass is found routinely by custodians in both the playground area and the surrounding grass play areas.
3.	Parking Lot Safety	Parking lot safety is a continuing concern for teachers. Staff cars are regularly broken into. The existing camera is not functioning and a lack of adequate lighting exists on both sides of the building.
4	Cross Traffic Safety Issue	Parents and visitors attempt to park along and drive fast through the drive access in front of the building entrances, causing potential cross traffic safety problems with exiting students. The problem has been resolved temporarily during final dismissal through the use of student crossing guards and orange cone markers, but parents still routinely disregard these signs, increasing the potential for accidents.
5	Old Carpeting	The carpeting in most classrooms is over a decade or more old, is lifting up in spots, shows a multitude of stains, and even after cleaning often emits odors. Carpeting is most critically a problem in the pre-kindergarten and kindergarten classrooms since most of the time is spent on the floor. Children often get sick on the floor and the carpeting needs to be cleaned much more often than in upper grade levels.
6	Thermal Control	There are different degrees of control teachers experience with respect to thermal conditions in their classrooms. Some teachers have the ability to control their univents, while a number of teachers do not. Operable window provide some local control of thermal conditions, albeit inefficient.
7	Emergency Lighting	There is a lack of emergency lights in stairwells.

The Environmental Quality Assessment Project
Baltimore City Public Schools

Case Study Report:
Mildred D. Monroe Elementary School #32

PROJECT OVERVIEW

This report documents specific environmental quality concerns of one of five elementary schools in the Baltimore City Pubic Schools. This report serves not only as a record of the environmental quality concerns themselves, but also describes the assessment process within which these concerns have arisen.

This section provides an summary of the project objectives, problem and approach, and process and procedures of the Baltimore Environmental Quality Assessment Project.

Objectives

The objectives of the Baltimore Environmental Quality Assessment Project project were to:

- develop an occupant-driven environmental quality assessment process through which environmental quality concerns can be creatively identified, addressed and influenced by school occupants themselves.

- assess environmental quality from the perspective of the experiences of students, teachers, staff, administrators, and parent volunteers in each of five Baltimore City Public Schools that chose to participate in this project;

- understand how environmental quality may or may not contribute to the educational process in each school with respect to Student Academic Performance, Student Social Development, and Teacher Instructional Performance; and,

- understand the role of facility management in maintaining and improving environmental quality.

For Mildred D. Monroe Elementary School #32, this report documents specific aspects of environmental quality of concern to the school. The assessment process was not conducted to judge the final worth or merit of the school as it relates to environmental quality. Rather, the intent of this project was to provide information useful for improving the environmental qualities of the school, especially those that may have some impact on the effectiveness of the educational process. It is the hope of all involved, that the results of this study be considered an affirmative step toward improving environmental quality at Mildred Monroe.

Problem & Approach

School officials across the U.S. increasingly recognize the impact of environmental quality of the school upon the educational process. Deteriorating conditions caused by

poor indoor air quality, asbestos abatement, fire code violations, and deferred mainte-
nance policies are publicly recognized as major contributors of serious health and safety
problems for students and teachers.

Additionally, environmental quality may affect behaviors, attitudes and performance
of students and teachers which may, in turn, have an impact on organizational effective-
ness and educational outcomes. What role these environmental factors play in influenc-
ing educational effectiveness and outcomes, and how they interact in contributing to
educational quality is less understood.

In order to clarify the link between environmental factors and the educational pro-
cess, this study begins with the investigation of environmental qualities directly experi-
enced by students, teachers, staff and parent volunteers in five local school settings.
Although the individuals from every group were interviewed, teachers were found to be
the most involved in the process.

This study is particularly interested in uncovering those environmental quality con-
cerns that school occupants see as supporting the purposes, activities and educational
goals of the school. How well the physical setting responded to the demands of the
educational process comprised its environmental quality or value.

In addition, this study has been designed to provide an example of how a school
might begin to improve environmental quality through an organizational development
process of identifying and addressing mismatches between the facility and its educa-
tional activities, programs and goals.

Process & Procedures

Each school case study investigation followed a research process in which a selected
number of teachers and administrators participated in actively clarifying the scope of the
project, identifying and prioritizing environmental quality problems, issues and con-
cerns, and formulating strategies for addressing these concerns.
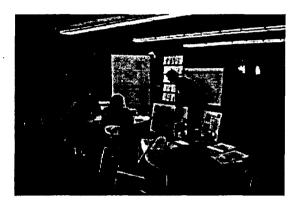
The report that follows briefly summarizes the project activities and assessment pro-
cess conducted within a six month period between July, 1995 and December, 1995. Any
mention of individual names are fictitious to protect the anonymity of participants in the
study.

In July of 1995, Mildred D. Monroe Elementary School agreed to participate in the
Environmental Quality Assessment Project.

During a visit on July 31, 1995, a physical inventory and preliminary walk-through
of Mildred Monroe was conducted, along with interviews of the principal and the head
custodian.

During a visit on September 19, 1995, a full day of observation was conducted which included behavior mapping, informal and formal interviews with teachers and photographic documentation of the school-in-use. In addition, 45-minute semi-structured interviews were conducted with three classroom teachers and one instructional specialist. Each teacher was asked to fill out a teacher survey-worksheet, as well as to administer a student survey.

Prior to a visit on October 23, 1995, information gathered from the previous visit was tallied and organized into a series of potential environmental quality issues to be discussed during the workshop. Workshop materials included a list of all issues, floor plans showing the location of issues throughout the building, a presentation board containing photographs of problem areas. Also included were individual issue cards and a blank matrix worksheet for ranking issues by priority (high, moderate, low, none) and the potential impact, if any,

Environmental concerns were identified and prioritized during the workshop.

on one of three educational outcomes (student performance, social development, teacher performance). The workshop, with a working group of four teachers and the assistant principal, lasted a total of 90 minutes.

During the months that followed, a teacher survey was administered to gather further information regarding teacher perceptions of environmental quality and was collected in mid-December 1995.

COPING WITH CHANGE

Mildred D. Monroe Elementary School has gone through many changes in its long history as a school in the Greenmount West neighborhood. Unfortunately, recent changes in demographics and school management threaten the very survival of this small school. The school, however, perseveres, and in the words of one teacher "we do what we have to do."

The present Mildred Monroe School was constructed and occupied in 1967, directly adjacent to the original Guilford Avenue School built in the 1890s which still

View of the main entrance to Mildred Monroe on Guilford Avenue

stands and is now the headquarters of the Greenmount Improvement Association and Urban Services. In 1980, at the request of the community, the school's name was changed to Mildred D. Monroe Elementary School to honor the memory of their beloved and dedicated custodian, who served the school for many years.

Mildred Monroe Elementary School is located in the Greenmount West neighborhood, north of the Central Business District, about three quarters of a mile north on Guilford Avenue. The school is bounded by Guilford on the east, Landale Street to the north, Federal Street to the south and a city alley that borders a parking area to the west. Surrounding the Mildred Monroe school site are industrial buildings to the east and boarded up rowhouses to the north. To the west are rehabilitated and gentrified rowhouses that extend up and down the majority of Calvert Street, one of the main streets (Interstate Route 2) extending from the CBD one-way north (along with St. Paul one-way south) to the John Hopkins University Campus about one mile north. Though the Greenmount West neighborhood is considered one of the better neighborhoods with respect to crime and drugs it still has its share of urban problems.

"I have certain families where they stay for three months and then they move to another family member's house ...they stay for three months...they move to another family...they may come back next year."[Principal]

The enrollment at the school has been in a state of slow decline for the past few years. At the time the school was being built, the neighborhood had a growing population. Since that time, however, the neighborhood has continued to decline, in terms of school age children, due in part to the rising costs of living in an area that is in the process of regentrification. The neighborhood housing infrastructure has been gradually increasing in value as a result of extensive rowhouse revitalization efforts. According to the principal, the upper grade classes are full, but the lower grade classes are not filling up as rapidly.
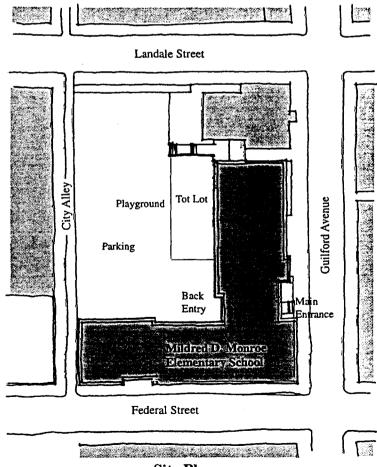
Ms. Norman, the school's principal, estimates that the community surrounding the school has a family mobility rate of nearly 50%. This is due in part to the realities of impoverished families living in rental housing. She explains, "Right now I have one kindergarten but I'm not worried because...they just haven't come in yet...I had 38 children on roll in September, by the 1st of October I had 34 children and they were not all the original 38. Eight had moved out, two had moved in...at least the building isn't going to move!"

Later in the year, there had been more major fluxuations in class sizes, providing yet another example of the affect of eratic mobility on the organization of Mildred Monroe. Twenty-two second grade students were shifted to other classes due to one teacher being reassigned to another school because of Monroe's lower enrollment. The objective in sending students to two other teachers was to keep the 2nd Graders together as a group

to respect and maintain their "informal social formations". The students were encour-
aged to "redesign" their space, eat together and do the same homework. Teachers coop-
erated in making the transition work for the students. The principal claims that the
transition was more difficult for parents to accept than their children, due to their famil-
iarity with their child's original teacher.

Mildred Monroe began the year with an enrollment estimate of 271 students served
by a staff of eight classroom teachers, a head teacher and a special education teacher,
occupying a the total of nine classrooms in the building. By the middle of the school
year, they were only serving 232 students, down 39 students from their projected enroll-
ment for the year. Ms. Norman adds, "I could get another 100 children and I wouldn't
fill this building."

The result of this mobility and slow decline in population in the immediate
neigbhorhood is that the school's capacity is not being fully realized. A total of three full
sized self-contained classes are vacant on the first and second floors. Unlike many
schools in the district, there is no shortage of space in this school. These extra rooms are
either completely vacant, or in one case, a teacher resource room has been created.

Landale Street

Playground

Tot Lot

Parking

City Alley

Guilford Avenue

Back
Entry

Main
Entrance

Mildred D. Monroe
Elementary School

Federal Street

Site Plan

Beginning on July 22, 1992 and ending on March 7, 1996, Mildred Monroe had been designated as a Tesseract school managed by Education Alternatives, Inc. (EAI) a private educational management firm, the lead partner in what was called the Alliance for Schools that Work· The Alliance for Schools That Work was a joint partnership between Educational Alternatives, Inc. (EAI), Johnson Controls, Inc., KPMG Peat Marwick and Computer Curriculum Corporation: EAI was the lead member of the Alliance, responsible for all instructional services; Johnson Controls was responsible for all non-instructional support functions including custodial, maintenance, grounds, security, and administrative services; KPMG Peat Marwick was responsible for managing the schools' fiscal operations; and Computer Curriculum Corporation was responsible for developing the computerized curriculum used by EAI.

The Alliance's charge was to manage, operate and maintain nine public schools totaling 810,800 square feet of space and serving over 4,800 students. The Alliance provided Mildred Monroe and eight other elementary schools with new computers and software, rehabilitated the school buildings, and established the Tesseract educational program.

Facility improvements included lighting retrofits, mechanical system renovations, roof replacements, window replacements, landscaping projects, intrusion and fire alarm upgrades, bathroom remodeling, extensive painting and carpet installation.

The Tesseract educational program is the result of the review and organization of several years of research on the components of elementary education that have been found to work which include: (a) a Personal Education Plan (PEP) for each student to set goals for learning to be signed off by parents, (b) staff development meetings held once a week on a variety of topics such as learning modalities and computer training, (c) instructional interns or aides with college degrees (but not necessarily with educational training) to increase the number of adults in the classroom, (d) Tesseract tests to complement standardized tests, (e) new instructional technology — four computers in every classroom and a central computer room using software developed by one of the Alliance partners, (f) learning activity areas and movable furniture, and (g) increasing parental involvement through the institution of Personal Education Plans, encouraging parental participation in the classroom or on field trips, in PTAs or attendance at school functions. Other innovations brought in by EAI were telephones in classrooms so teachers could contact students' families, increased supplies in the classroom, use of whole language and whole math, the use of a Learning Style Assessment, and customized instruction.

Although the Tesseract experiment abruptly ended after only three and a half years of an original five year contract, Mildred Monroe continues to operate, coping once again with a change outside of its control. During my interview with the principal Ms. Norman at the time the Tesseract program was still in operation, she stated, "the teachers here are willing to make adjustments...in order to have the Tesseract philosophy work,

people have got to be willing to change what they normally do in a classroom...these teachers have been willing to make these changes."

Now that the Tesseract program has ended, the principal plans on retaining many of the strategies brought to Mildred Monroe when EAI leaves, such as identifying learning modalities, morning meetings, and the emphasis on small group instruction over large group instruction. "Who knows, maybe we will be able to keep the name Tesseract," Ms. Norman muses. In addition, the principal is interested in retaining contracts with as many of the private contractors as is feasible.

A DAY AT THE SCHOOL

Some parents drop off their children in the playground in the back of the school as early as 7:30 AM before going to work . The children hang out in the playground using the entire parking lot area as their playspace. Some children swing from the monkey bars, while others play near the blue painted fence of the tot lot. An elderly man stands nearby watching his grandchild play within the bounds of the tot lot. Some children are dropped off by their parents on their way to work, other older children arrive from all directions at the back lot of the school unattended by an adult.

Students are not allowed into the building, the principal Ms. Norman explains, until school begins due to lack of supervision. Allowing them to come into the gym or cafeteria on cold or rainy days is not possible, according to Ms. Norman, because they lack the necessary supervision. Another problem is that if supervision is provided, it may be perceived as a form of daycare for parents eager to drop off their children. In any event, Ms. Norman explains that providing this "daycare" service for parents is not within the present budget of the school.

"When I came this summer I had two matresses and a sofa...an old TV set...a hot water heater...a washing machine and a dryer and a rug...the only thing I haven't had yet is the kitchen sink!" [Principal]

The property just north of the school grounds, owned by Urban Services, is lacking in appearance and unfairly reflects badly on the school. Most of the discussion of the working group focused on the poorly maintained dumpster on the Urban Services property in full view of the school. Resolving this issue was a high priority for the working group. Unfortunately, the school has little recourse for improving this

Poorly managed Urban Services dumpster
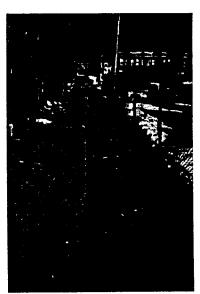
situation. The school has had to deal in the past with several city agencies if they wanted the garbage to be picked up. It is clear that the surrounding neighborhood residents have taken advantage of the school's efforts to have garbage regularly removed by using the dumpster to rid themselves of their own garbage — residents presumbly have problems as well getting their own trash collected. Bernard, the school's head custodian, acting on his own initiative, was for a time able to empty the Urban Services dumpster by hauling off garbage to a nearby landfill. Unfortunately, since his truck has had to be serviced, he has not been able to continue this generous service.

Ironically, this dumpster belongs to the property which houses the Greenmount Improvement Association (GIA), an association dedicated neighborhood improvement and beautification, and which rents the top floor of the Urban Services Building. (GIA's long-term goal is to demolish many of the old boarded-up homes in the area and gain additional green space in the Greenmount neighborhood, which was once on the suburban edge of Baltimore.) The unsightliness of the Urban Services property often does the school a disservice by giving visitors the impression that the school grounds are not well kept. Renovation of the existing Urban Services building continues slowly, however, the site surrounding the building has not been maintained to the satisfaction of Mildred Monroe.

The existing city alley, directly adjacent to the school parking lot, adds to the unsightly appearance of the boundaries of the school grounds. Large pot holes and buckles in the road have made site entry difficult off Landale Street .

The alley has been in dire need of repair and replacement for years. Teachers complain that the alley is very difficult to safely navigate dueto its dire condition. As a result, for years, few staff members have used this entry to the site.

Playground safety has also been seen as a high-priority problem. As with many Baltimore City schools, the playground has not been updated since the school's original construction. Outdated metal pipe "jungle gym"

The City alley is in need of repair

playground equipment has slowly degraded to the point of being extremely unsafe. The presence of broken glass on the playground is another cause for concern. Children play kickball and dodgeball, as well as, create imaginative games to occupy their time, but in the eyes of teachers, this place cannot be considered a playground. The tot lot is nothing more than a black asphalt lot surrounded by fencing; As one teacher described it, "a pseudo-playground". In an effort to improve the playground, the school, like many others in the district, painted a large multi-colored map of the United States in the center of the parking lot. Children regularly scratch themselves

on the pavement and as one teacher remarked "its not uncommon for a child to get a bloody nose from time to time playing on this equipment" (refering to the jungle gym and monkey bars). Although there have been no major accidents in the playground, the potential exists for serious injury.

Cross-traffic safety between automobiles and children is of concern to the working group.

The playground is unsafe and lacks developmentally appropriate play equipment.

The location and placement of the playground within the parking lot itself poses another potential safety concern of cross traffic between playing children and moving automobiles within the parking lot. Ms. Henderson, one of the teachers in the working group exclaimed, "Where do kids play?...I really hate the parking lot as a playground for the kids...its the pits". Although no accidents have occurred, this issue was seen as a major concern and one in need of attention.

Despite these problems, the working group felt that the grounds are kept well by the custodians. According to the group, the custodial staff has been effective and alert in attempting to keep problems of the grounds to a minimum, however these issues remain an ever present concern and one they would like to be able to address. Graffitti is removed in a quick and effective manner, although it remains a moderate reoccuring problem. During a walk around the playground and parking lot in a later visit, the principal, Ms. Norman pointed out an idea she was considering a painted mural on the concrete retaining wall dividing the Urban Services site from the school playyard in response to the continuing problem of graffitt on that particular wall. There is some precedent for her idea: in the small urban park just southwest of the school on the corner of Federal and Calvert Street a bright mural has been painted on the south wall of the existing rowhouses. In fact, murals have always been used as proactive strategies to combat graffitti in many cities throughout the country. Principal Norman has, in addition, some past experience in enlisting local artists within the community. A mural on the school grounds might, hopes Ms. Norman, spark some additional community interest and pride in this neighborhood school.

Although most children line up in the parking lot in the back of the school, many parents bring their children to the front of the school on Guilford Avenue. The planters

in front of the school are well kept and green offering a soft edge to the harsh urbanity. Beyond the planters lie the front steps to the entrance, a lively and social space. Two mothers escort their children to the school, they stay and chat awhile in front of the school. The busy pedestrian presence on the sidewalk leading to the school provides a feeling of security for an otherwise blighted neighborhood. The first school opens up at 8:00 AM when students enter the cafeteria for their breakfast.

The main entrance to Mildred Monroe on Guilford Avenue offers a soft edge to the harsh urbanity surrounding the site.

Bernard, the head custodian supervises the arrival of students through the front door. Beginning at 8:20 AM students stream in very organized to their respective self-contained classrooms.

Entry to the school building is effectively controlled with a buzzer on the front door. The only time unlawful entry has been a problem of late has been in the warmer months when the doors are propped open for ventilation. With more parents visiting the school than in the past, many times there are more opportunities for people to slip through without signing in. In most cases, it appears that unlawful behavior is perpetrated by "family members" within the community. This eventuality is dealt with through the insistence of the administration for visitors to sign-in. This procedure often fails however, because some visitors may sign-in yet not travel to the destinations they claim they are going. Parents often feel they have "special rights" to walk directly to their child's class which is not actually permitted. Even with these isolated problems, the current system of controlled entry is working satisfactorily for the school.

Students stream into Mildred Monroe in the early morning.

There are strong indications that parental involvement, while still low, is nevertheless turning upward. The appointment of a new parent liaison, Mrs. Reynolds, who is familiar with the surrounding community is one of the reasons for this renewed optimism. Even within the school, she exhibits an impressive display of leadership and ownership in the school, and she takes seriously her role in the educational process. Seventeen "Activity Levels" of parent volunteerism are identified in the Parent Academy Handbook from art material preparation, bulletin board and exhibit updates, to cafeteria helpers, constructing learning stations and monitoring pupil attendance.

The location and presence of the Parent Academy directly off the main lobby and across the hall from the main office is right in the heart of the school and serves to add a strong identity to the school.

The design of the main lobby and entrance is very spacious and celebratory with many signs of school pride on all the walls of the lobby including work done by parent volunteers: "Soaring steadily towards success," "I'm taking a stand on Drugs," "We Can Do At 32". Parent volunteers have a continual presence in a room centrally adjacent to the main lobby of the school and in close proximity to the main office. When one enters the school building, the first thing that is seen is the Parent Academy door, wide open, inviting and full of the energy that Mrs. Reynolds and her staff bring to the place. They have stationed chairs outside of their Parent Academy room from which they can monitor the hallways and the entrance.
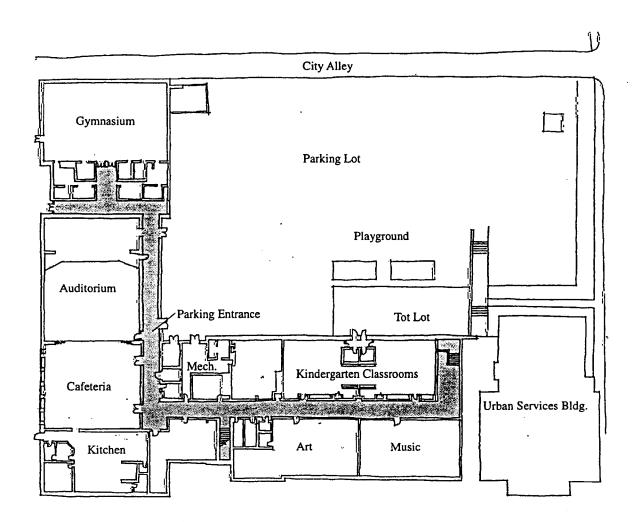
A welcoming Parent Academy

"She [Mrs. Reynolds] helps parents. She helps the children. She calls your parents when you're sick. She checks your shots...lots of stuff." [Brian, a 4th Grader, about a Parent Volunteer]
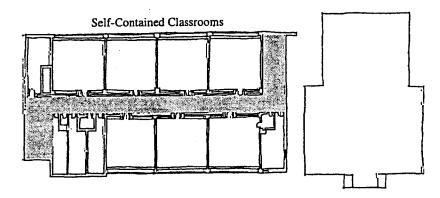
Parent volunteers are currently being trained to monitor attendance records as well as other tasks in order to support teachers directly in their classrooms. The Parent Academy offers a tangable link between the home and school environments. The parent volunteers recently created a "Say No to Drugs" poster and located it on the corridor wall outside the basement cafeteria with the intent of having students physically sign their names in a pledge to say no to drugs. Parents upon seeing this sign-up poster with their childrens' names wanted to participate and sign their own names to the poster. This could be an indication that parents have begun to get more involved in the school.

Beyond the main lobby and the Parent Academy are the self-contained classrooms located on one basement level and two above ground levels. The design of this school is a double-loaded corridor, self-contained classroom building, which, according to many teachers, serves them quite well functionally. There are several assembly spaces available for larger groups to gather such as the gymnasium, the cafeteria and the auditorium. In fact, there is ample room for the morning meeting assemblies that take place each day.
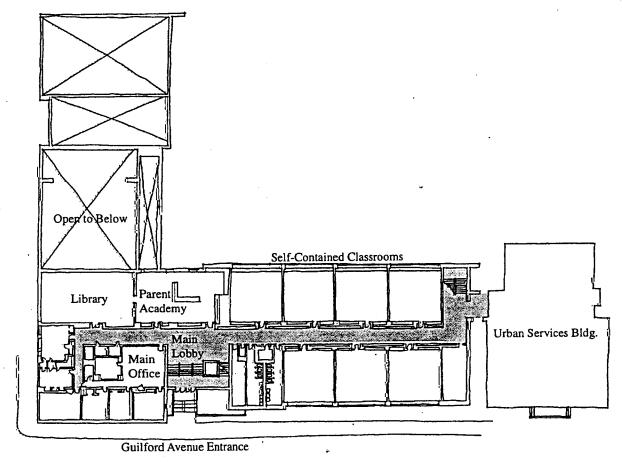
Due to decreased enrollment there are several unused self-contained classrooms available on the second floor little over a year. The function of these unused classrooms have been the subject of discussion and some experimentation. One classroom has been used as by Baltimore City Public Schools as a storage room for science supplies. Another

City Alley

Gymnasium

Parking Lot

Auditorium

Playground

Parking Entrance

Tot Lot

Mech.

Cafeteria

Kindergarten Classrooms

Urban Services Bldg.

Kitchen

Art

Music

Ground Floor Plan

Self-Contained Classrooms

Second Floor Plan

Open to Below

Self-Contained Classrooms

Library

Parent Academy

Main Lobby

Main Office

Urban Services Bldg.

Guilford Avenue Entrance

First Floor Plan

self-contained classroom was used as a dedicated science room that was to be shared between a number of classes in the upper grades. Existing classrooms did not have the room for science learning areas so the addition of a dedicated room for science projects was a welcome idea to the staff. After a short time, however, this room came under disuse, due to a lack of management. It was the conclusion of several staff members that the dedicated science room was not managed as effectively as it could have been. Teachers generally felt it was difficult to keep the work of their class separate from the work of other classes. In some instances, projects from other classes were inadvertently knocked over. Finally, there was no one individual assigned to actively maintain the shared science room. The room is now assigned as a resource room for teachers. (A similar problem of lack of management has been of some concern with respect to the Art Room as well — although, not to the same degree). Other informal uses for empty classrooms on the second floor have been for small group learning situations, and as break-out rooms for the discipline of socially disruptive students, while basement classrooms are used for community meetings (e.g., Police Activity League — PAL — Program), after school tutors, and art and music classes.

During the workshop the possibility of using one of these classrooms as a centralized teachers lounge was discussed. The existing teachers' lounge is not used due in part to (a) its remote location, (b) its poor condition, and (c) teachers not having enough time to justify its use. As the group explained, teachers take their lunches in one teacher's classroom, while the existing Teachers Lounge has become the primary hang-out of the instructional interns. When the weather gets warm, even though the Teacher's Lounge has air conditioning, these same teachers will occupy the air conditioned computer room instead located directly across the hall from this teacher's classroom. Providing a centralized lounge might increase the use of the lounge and encourage more interaction between teachers in the school. The idea was discussed and rejected as unnecessary.

Currently, there are no standards for the size of academic learning areas which vary from state to state. However, there is nationally, one organization that has begun to rethink the sizes of educational spaces. In their Guide for School Facility Appraisal, the Council for Educational Facility Planners International (CEFPI) state, "New forms of instruction require greater amounts of space than in the past. Special education, remedial classes, cooperative learning, and community participation all create spatial requirements that differ from earlier periods of education."

CEFPI recommends the following: The "building capacity" of an elementary school (the number of students capable of occupying a school facility) can be measured by taking the total gross square feet of the facility and dividing by 90 GSF/student (90 GSF being a CEFPI recommended number). The recommended gross square footage per student for kindergarten and pre-kindergarten classes are: minimal 30-35 GSF/student, acceptable 36-40 GSF/student, ideal 40-48 GSF/student. The recommended gross square footage per student for elementary classes: minimal 23-27 GSF/student, acceptable 28-30 GSF/student, ideal 31-36 GSF/student.

Taking these standards as a means of assessing the conditions at Mildred Monroe, the school building is below its capacity of 530 students at 254 students (at the time of the assessment). Pre-kindergarten and Kindergarten classrooms are 'ideal' at 58 gross square feet per student. In addition, the First through Fifth Grade classrooms are 'ideal' at 31 gross square feet per student.

Interestingly, with all these auxillary spaces available in the school building (cafeteria, auditorium, gym. library and vacant classrooms), some students still have a lack of personal space due to crowded conditions within their classrooms. Even though classroom densities are considered ideal by these standards, crowding in the upper grades can be a problem at times since older students physically take up more space. The amount and type of furniture occupying the classroom and the layout of the classroom seems to compound the problem.

One of EAI's innovations was to remove all desks in classrooms and replace them with kidney and trapazodial shaped tables to encourage small-group cooperative learning. One teacher explained, "I'd like to go back to desks and get rid of kidney shaped tables...I can only get four students to a table with ten and eleven year olds." She continues to explain that in these small self-contained classrooms its hard to configure six kidney shaped tables. Adding to the frustration of tables over desks is the problem that students have no place to put their books and materials.

Typical self-contained classroom with tables and small group instructional areas

Teachers feel that implementing the Tesseract philosophy physically within their classroom with specific areas or corners for math, writing, art and science is difficult if not impossible. Even though EAI gave them a short in-service instruction course on how to layout their classrooms to fit the Tessearct philosophy. Componding this problem has been the requirement to use tables for cooperative learning, which as discussed above, take up more room than the chairs once did. Problems have also arisen with the inefficient layout and installation of new classroom computers in a few rooms that take up even more space. As a special education teacher insisted, "this school was built for row and column classes period." Although the problem of fitting the philosophy to the room was frustrating to teachers and appeared to affect their own performance, it was deemed a low priority for the group.

When students don't always get the personal space they need, the situation often results in fights. One teacher stated: "We average several fights a week." There are a number of ways that teachers have attempted to provide students with a sense of per-

sonal space. Some strategies involve increasing student's sense of personalization and ownership. Most students for instance have individual lockers (some students have to share with others) that are all individually personalized with the student's name and some artwork they have completed in a recent assignment. Another example is due to the use of tables for cooperative learning strategies. Students do not have desks to store their materials, and as a result, many of a student's personal belongings may be stacked on top of the workgroup tables limiting effective workspace. In a situation such as this, students can become territorial about their workspace and this can become another major obstacle to securing their sense of privacy and personal space. Several teachers have developed a system of shoeboxes for students to keep their materials and supplies in. The school has thus far been unable to procure adequate undertable drawers for these tables so as to provide some additional working surface on the tables.

Storage for teachers' personal belongings was discussed by the working group as a moderate concern. Some teachers have keys to personal closets, others do not due to lost or misplaced keys over the years. As a consequence of the lack of locked storage, many teachers have lost purses, wallets and other personal items over the years. One teacher explained that her purse was stolen our of her classroom while she was in the gym with her students — she does not have a closet in the room to lock, nor does she have a lock to her classroom. The cost of resolving this problem, by re-keying or by investing in portable lockers were seen as prohibitive. Instead, teachers are asked to change their behavior — do not bring in belongings you do not want to lose. Teachers agreed that having adequate storage for personal belongings is both a safety and security, as well as a personalization and ownership issue.

Overarching these physical issues, the lack of air conditioning is the major concern for the school for a significant part of the school year. From late April or early May and continuing until school ends in June, as well as in the month of September when students and staff return in the Fall, the building can get unbearably uncomfortable. One teacher, referring to the upcoming Spring testing complained, "Its too hot! how can you test in heat? Its unfair." Another teacher brings in a small home fan to her classroom during hotter months to at least circulate some air through the classroom. To the working group, the lack of air conditioning and circulation of stuffy, hot and humid air may potentially be affecting physical comfort and health as well as limiting the effectiveness of teacher instruction and student performance. The teaching staff willingly copes the best they can with these uncomfortable conditions and admits they may be more affected than their students.

Teachers sense that students may not as be as affected as adults and that they might cope better, but at what cost? Their students are subjected yearly to hot and humid temperatures during test taking periods in the Spring. It was agreed by most staff that these environmental conditions, above and beyond performance issues, are not fair for students. In the past, in an effort to provide a more comfortable learning environment for children, the principal has gone as far as to relocate classes occupying west-facing

classrooms to east-facing classrooms, or had used the library and the computer room for instruction, the only air conditioned spaces in the building other than the administrative offices and the kitchen. If these strategies fail, Mildred Monroe has a policy that is rarely used, but one that has been necessary in the past: the school is dismissed if the outside ambient temperature reaches 90 degrees Fahrenheit by 11:00 AM.

A moderate concern that arises as a consequence of humidity is the problem some teachers have with keeping wall hangings from falling off the wall. They have found it very difficult to attach student work onto the smooth, painted concrete walls and often find student projects that have fallen off the wall overnight and are laying all over the classroom floor the next day. We suggested two-inch core strips with optional metal hangers that can be purchased as a variety of lengths and attached to walls at any height.

During the heating season, there are certain classrooms that are consistently cold due to inoperable univents, but these problems are much less severe than the warmer months, often being taken care of by the custodial and maintenance staffs.

Although many teachers are very satisfied with the work of the custodial staff, a few teachers feel that the level of service is not what it was before the private company appeared on the scene. The debate within the working group centered on expectations. The desire to clarify the needs of teachers with respect to the scope of cleaning services was of moderate concern for the working group. A few teachers felt that in some cases, the cleaning of classrooms was not as satisfactory as in the past; citing the lack of clean of counters. Others disagreed and felt that custodial services have been satisfactory and that cleaning counters was never within the scope of the company's contract. The principal, Ms. Norman, remarked that possibly the recent turnover of custodial staff had made it difficult to develop a long-term working relationship. She felt that possibly the teaching staff had not been specific enough concerning their needs. One teacher indicated that the expectations of many tenured teachers within the school has always been very high as a result of the exquisite work of a certain previous custodian, Mildred D. Monroe!

"She had kept an immaculate building, had shoveled snow, given mittens to children on cold days... she was a fixture in the community and when she died, the community asked that Guilford School be renamed Mildred Monroe in her honor and the school board agreed to it. Her grandchildren are still attending this school, so you have a sense of the importance [of Mildred Monroe] to the community..." [1st Grade Teacher]
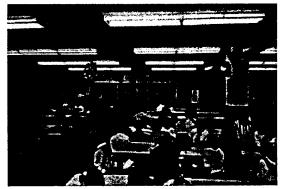
Like most schools, the name of the school itself carries a special meaning, in the case of Mildred D. Monroe Elementary School that meaning is a special and important feature for many teachers who remember Ms. Monroe. The school was named after the custodian a dozen years ago when she suddenly and unexpectedly passed away. Ms. Norman explained, Mildred Monroe embodied the ideal of safeguarding and caretaking,

she took full custody of the school.

The symbolism of Mildred Monroe as an idealized caretaker is taken very seriously by Bernard, the school's present head custodian or "team leader." He was assigned to the school by Johnson Controls, a private facility management company contracted by Education Alternatives, Inc. (EAI) in 1992 to provide all custodial and maintenance services to the nine schools managed by EAI. Although the contracts with EAI and hence Johnson Controls have expired as of March 1996, Bernard is expected to continue working at Mildred Monroe under the direction of Baltimore City. He takes very seriously his company's motto "to meet and exceed the expectations of the customer," and for him, that means making sure floors are shining, trash is emptied, rugs are vacuumed, and chalktrays are cleaned, making best use of the most innovative products on the market, and engaging in intensive staff training aimed at continuous improvement — he is a true manifestation of the Total Quality Management philosophy espoused by Johnson Controls.

The principal, when asked to evaluate how well she feels the school is doing with respect to environmental quality states, "I think in terms of a clean environment, a sanitary facility, I think we're well above average...we're very good in that area." A teacher from the working group was also insistent about the custodial care explaining, "The floors sparkle...the custodians work very hard [and] meet my needs, they're wonderful. The school is attractive to students and people who come in [and] the staff has done everything they can do to keep it attractive."

Lunch periods at Mildred Monroe can be very loud and chaotic. Students have been contained in classrooms from 8:20AM until 11:00AM and they are ready to let loose. The noise in the cafeteria is in stark contrast to the relatively quiet corridors and classrooms apparent throughout the morning. While six classes file into the cafeteria, Ms. Norman speaks over the microphone in an effort to "direct traffic" and later, to penalize a class for being to loud and disruptive. It takes nearly fifteen minutes to calm this class down, before they are allowed to get up and receive their lunch.

Cafeteria can get very loud and chaotic at lunchtime, but during other periods of the day, the cafeteria is a place for several small group instructional areas.

To be fair to both the excited children and the exasperated principal, the physical features of the school's interior may be contributing to the ear deafening noise. There are extraordinary amounts of hard, smooth surfaces that make up the interior of the buiding: smoothly painted concrete and tile wainscot walls, smooth vinyl asbestos tile, and quite uncommonly painted concrete block ceiling panels.

The cafeteria is not the only space laden with acoustical problems: the bathrooms on both the first and second floor suffer as well. Ms. Norman explains, "The lavatory...because of the size of the room and probably the materials, the noise, the three children in there, if they decide they're going to have a loud conversation, you can hear them." Ms. Green, a fourth and fifth grade teacher who's classroom is directly across the corridor from the second floor bathrooms stated, "The bathroom is poorly treated acoustically. Everything vibrates and goes into my classroom. I can hear kids going in and out of the bathroom all day long." This constant noise can be a distraction for her students, especially in the warmer months when she tries to keep the door open to create cross ventilation to keep the room as cool as possible. Ms. Norman explains another strategy that has been attempted to curb the noise problem: "We've tried to help with some sound deadening with some curtains here and there...we don't have curtains in every classroom and if we had..we'd probably have a lighting problem [laughter]...I guess you...weigh one over the other." The colorful rugs the school obtained through EAI added another element to absorb noise. Addressing the problem of noise in the bathrooms may involve both a management/policy response as well as a physical response. As the principal explains, with five classrooms, each teacher may be sending only two students to the bathroom, and consequently as many as ten students could be occupying the bathroom at any one time.
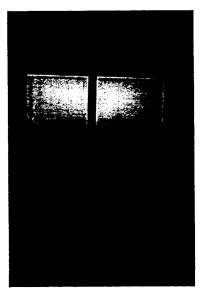
A Tesseract rug and a rocking chair, two physical features of the Tesseract philosophy.
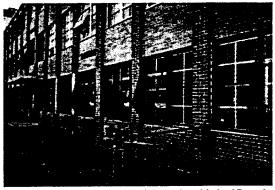
Noise from the bathroom was given a low priority by the working group, as was noise from within the classroom (which happens to have similar non-obsorbing interior materials), and street noise. Street noise is a problem in the warmer months when the windows are openned. On the Guilford Street side, cars can be heard, but the most distracting noises are often adults walking by the school and yelling obsenities. On the west side of the building, the majority of distracting noise comes from the playground. Neither one of these sources of noise were seen as being that out of the ordinary and therefore were not seen as critical concerns to address.

Another feature of the classrooms that teachers in the working group identified as an important, yet low priority are the unsightly frosted shatter-proof plexiglass windows. The advantage is that people on the first floor cannot see in to the building (in fact, bars have been added

A typical weather beaten Plexiglas window at Mildred Monroe.

to the first floor windows rendering them completely inoperative). The disadvantage is that it is difficult to view out the windows to gauge the weather conditions, daylight that comes through the windows is poor, their are unsightly and they cannot be cleaned without further scratching of the surface. One teacher stated, "Last year we had strong winds outside but no one in the building was aware of it because we couldn't see out."

Although new grates installed recently add significantly to the security of the school building, they represent to teachers a sad reminder of the circumstances their students live with.

The front exit can get very crowded along Guilford Avenue after school. Later, after most of the students have left the building, a businessman from the across the street comes into the front doors of the school to report to the prinicipal that he caught some students running dangerously across the street. He says with a deep sense of concern, "We need to look out for the children. They may not be mine, but they [are] all our children."

FINDINGS & DISCUSSION

The previous section describes in some detail the more critical of the twenty-three (23) distinct environmental quality issues of concern at Mildred Monroe identified by the working group (See Appendix A for a complete listing and summary of these issues).

Some of these issues overlap and in some cases, contradict each other. For instance, the desire for natural daylighting, fresh air and outdoor views were often overruled by more critical needs for security from potential intruders, which dictated the placing of metal grates on the now locked first floor windows. To further understand the implications of these issues on the educational process, through the assistance of the working group, issues were categorized by (a) ten attributes of environmental quality, and (b) their potential influence on three broadly defined educational process outcomes; student performance, student social development and teacher instructional performance.

Ten distinguishable attributes of environmental quality have emerged from the intersection of the researchers' findings in Baltimore City Public Schools and what is known from previous research literature. Not only was there a desire to understand the nature of the interaction between the various attributes of environmental quality, but the appraisal of teacher perceptions of the potential influence on the educational process was desired as well. What follows is an analysis of the relationship between these attributes

of environmental quality, the issues raised in the working group and their percieved potential impact on the three educational process outcomes.

1. Physical Comfort and Health *refers to the degree to which occupants feel the indoor environment meets their physiological needs with respect to thermal and air quality, illumination, noise and odors.*

- Physical comfort and health was the most frequently referred to attribute of environmental quality. Through interviews and the workshop teachers and parents alike identified concerns such as temperature (#1), acoustics and noise in bathrooms (#13) and daylighting problems with frosted windows (#16).

- By far the highest priority for the working group was the lack of air conditioning during the rising temperatures and humidity of the warmer months of the year (Issue #1). Temperature and humidity problems were seen as potentially affecting student performance, social development and teacher instructional performance. Although there are a few spaces that are air conditioned such as the library and computer rooms, the problem can be of real concern especially during periods when tests are being conducted. Unfortunately, budget considerations have limited the possibility of air conditioning in this building.

- Although acoustics and noise issues were mentioned (#s 13, 14, 15) these issues were perceived as being of low priority and not as much of a concern as other environmental quality issues. It is clear that the school suffers acoustically from many non-acoustical materials on floors, walls and even ceilings (ceilings are painted concrete block rather than the very common acoustical ceiling tile found in most modern school buildings).

- Finally, with reference to physical comfort and health issues, there has been some concern by a few teachers in the working group over the responsibilities of the custodial staff regarding the cleaning of classrooms (#12); specifically the cleaning of counter surfaces within the classroom. It was suggested that this problem might be the result of a turn-over of custodial staff in recent months. A revisiting of custodial responsibilities was suggested by the working group to resolve any continuous or potential problems.

2. Classroom Adaptability *refers to the degree to which occupants feel that the physical classroom space can be adapted to different and desired educational activities and functions.*

- The environmental quality of classroom adaptability was the third, most mentioned quality to be raised by the working group.

- The innovations introduced by EAI into the existing self-contained class-

rooms were seen as welcome albiet challenging for the teachers with respect to adaptability. All desks were replaced by classroom tables (#6), ironically in many cases, causing problems with the flexiblity of classroom space: desks were seen by some teachers as providing more flexibility than bigger tables which took up the majority of classroom space. Finding a solution to the problem created by introducing tables into the classrooms was seen as a high priority to the working group. The table issue impacted the ability of teachers in some cases to effectively conduct cooperative learning exercises (#22) that at times required free movement which is obviously difficult to do in a room occupied by tables.

• Teachers felt that these problems might affect to some degree student performance as well as social development. The reason is connected with several other qualities of the environment: crowding, the lack of privacy and personalization and ownership all can potentially converge on a student's experience at a group table to potentially affect both a student's performance and his or her social development skills.

• Teachers mentioned wall hanging problems (#11) in warm weather as being one problem that often affected their instructional performance by forcing them to take time out of their planning to rehang visuals, posters and student artwork.

• Inability to conduct interclass projects (#21), or team teaching, could have some impact on students social development (offering opportunities to interact with other students), and also limits the teacher's ability to instruct larger groups. If several classes would need to gather in one place, it could be done quite easily by using the cafeteria or auditorium, but this type of activity occurs only occasionally and is therefore a low priority.

• There was some concern over the installation of the computers in several classrooms (#20) that limited use of valuable bulletin board space. It appeared to the working group that the computers could be organized in such as way to limit the amount of direct wall space they occupied by grouping them back to back.

3. Safety & Security *refers to the degree to which occupants feel the school building contributes to protecting occupants from harm, injury, or undue risk.*

• Safety and security was one of the four most often mentioned environmental quality of the ten investigated and was of constant concern and of highest priority, especially on the school grounds: child safety with vehicular traffic (#5), the disorganization of the area around the Urban Services Dumpster (#2) where trash is not regularly picked up by the city, the city alley to the west of

the parking lot (#3), and the low level of safety associated with the play-
ground (#4) comprised the issues discussed.

• Most safety and security issues were not seen as affecting student perfor-
mance in any way by the working group. Child/vehicular cross traffic (#5)
was seen as possibly inhibiting social development on the playground.

• Security concerns over teachers' locked storage (#10) was thought to serve as
a distractor of sorts on a teacher's ability to focus on instruction without
having to worry about whether his or her personal belonging were secure,
however it was considered of moderate priority.

• Unlike other schools in the study, Mildred Monroe was less concerned with
threats from intruders (#19) due to the recent installation of a front door
buzzer. Intrusions have diminished since the installation.

4. Building Functionality *refers to the degree to which occupants feel the various
places within the school building are functionally compatible with the school's educa-
tional programs and activities.*

• Due to the flexiblity and availability of space within the school due to lower
enrollment, building functionality was not seen as a problem and it was not
seen as possibly affecting in any adverse ways any of the three educational
outcomes.

• The only issue that arose during the interviews and workshops was the
underutilization of the teacher's lounge (#17) which was not seen as a prob-
lem for the working group in the final analysis. ADA accessibility issues
(#23) were seen as important but of low priority (unless any major building
renovations or alternations occur at the school they are not required to comply
with the ADA accessibility laws).

5. Aesthetics & Appearance *refers to the degree to which occupants feel the school
building is attractive and provoking.*

• Aesthetics and appearance was the second most mentioned environmental
quality from participants and the working group believed to potentially
influence student and teacher performance and social development.

• Much of the problems with appearance were and are associated with the
exterior grounds of the school: the Urban Services dumpster (#2), the city
alley in need of repair (#3), and the playground (#4). However, paradoxically
these particular issues were not seen by the group as affecting any educational
outcomes in the way problems within the building were.

• Within the building, other than the concern over classroom counters (#12), a single carpet problem (#8) and some lingering concerns over insects (#9), teachers are very satisfied with the appearance and cleanliness of the school. Aesthetics and appearance of the building as illustrated by issues #8, #9, #12 were perceived as potentially affect both students' and teachers' attitudes, thereby affecting teacher performance. This paradox could be explained by the fact that students and teachers spend most of their day within the school building and it is here that aesthetics and appearance have their greatest impact on occupants. Teachers give the unsightly windows (#16) as an example of this relationship. The fact that they cannot look out clearly affects their attitudes about their classroom. What is still in question is whether the unsightliness of windows keeps them focused on activities within, possibly improving their performance, or the fact that they cannot take short visual rests from instructional activities to reenergize themselves, thus decreasing their performance.

6. Personalization and Ownership *refers to the degree to which occupants feel the school building offers opportunities to create a personal and self-expressive environment and engender a sense of ownership.*

• Personalization and Ownership issues arise with respect once again to the concern over classroom tables (#6), the lack of personal space for students (#7) and teachers' locked storage (#10). The concensus of the working group was that the lack of personal space students have, due in part to the lack of room at classroom tables, is a cause of many of the distruptive problems in the classroom. Students have few ways to personalize their area, as they may have been able to do when they had their own desk. The teachers try to compensate by placing students' work on the walls of the classroom and in the hallways of the school thereby instilling a sense of personalization and ownership on a larger scale (i.e., "this is my classroom, this is my school").

• In spite of these displays, the hallways, although containing student work and slogans, often posted high above the lockers, is not enough to enliven this more public and visable space. It may be the sheer size of the school in relation to the number of students actually occupying it that prevents the school from seeming active and full of energy since activity is spread out and isolated in individual classrooms.

• Where personalization and ownership qualities are clearly in view, however, is at the main entrance lobby and outside the Parent Academy room. It is here where the life of the school is visually expressed with an abundance slogans on the walls, posters announcing events, flyers littered on waiting tables and a photographic portrait of Mildred Monroe. Although not identified by the working group, this area could be seen as having a positive influence on social development of students.

7. Social Places (Places for Social Interaction) *refers to the degree to which occupants feel that places within the school building provide opportunities for meaningful social exchange and interaction.*

- The most openly social place in the school is clearly the combined adjacent areas of the Parent Academy, the main lobby and the main office. It is this area that provides the school it's liveliness, and a great deal of rich informal social interaction takes place throughout the day.

- Other than the main lobby area and the cafeteria/auditorium, the majority of students and teachers are isolated in self-contained classrooms. Within the classroom, most of the social activity takes place at the classroom tables (#6) which is often more of a hinderance than a help to some teachers in the working group. Again, referring to the interplay of factors contributing to this perception one should point to the age of the student, their close proximity to one another at tables intended for four or six when up to eight might be sharing. As discussed above, issues of privacy, personalization and ownership and crowding play into this concern.

- The playground and the cafeteria are the two locations that students are free to express themselves and let off some energy. Even with teacher concerns over the lack of opportunities for personalizing the playground (#4), students find imaginative ways to make the playground as well as the parking lot in general their own.

- The unused or underutilized Teachers' Lounge (#17) is not seen as a problem for teachers; they have more informal places in their own classrooms where they meet and have lunch.

8. Privacy *refers to the degree to which occupants feel that there are places within the school building which provide opportunities for an individual or a small group to be free from the intrusion of others.*

- The working group was in full agreement that the school does not provide adequate room for privacy for students possibly affecting social development and in some instances student performance. Self-contained classrooms limit the ability of teach ers to provide semi-private work areas for students in need of such space (#7). Crowded classroom tables (#6) add to this perception. Often, disruptive students are taken out of the class and in to a classroom where similar students with similar behavior are placed until then can settle down and be returned to their class.

- Teachers have opportunities for privacy, such as the teachers' lounge, but they are not always used due to the shortage of time. The working group was most con cerned about students not having a suitable way of gaining privacy within their class rooms.

This was seen as a high-priority issue, however, they could see no immediate or obvious way to resolve this ubiquitous problem.

9. Sensory Stimulation *refers to the degree to which occupants feel the school building provides a stimulating environment for learning that is safe yet challenging.*

- Like other schools in this study, Mildred Monroe felt they had a good handle on providing the appropriate level of sensory stimulation for their students. The only issue in which sensory stimulation applied was playground safety (#4).

- Previously, during the interview process, teachers indicated that sensory stimulation, although not one of the most important qualities, does potentially contribute to student performance and social development.

- As mentioned above, the sterileness of double loaded corridors on all three levels adds to a sense of low stimulation for an elementary school. This concern, raised by the reseacher, was explained by the teachers within the working group as a temporary condition all schools go through in the first few months of their operation: it takes time for students to generate work and fill the walls with the outcomes of their projects. In fact, the researcher noted this to be the case, when, in his subsequent visits, he observed new and additional visual presentations throughout the school.

10. Crowding/Spaciousness *refers to the degree to which occupants feel the school building cannot adequately accommodate the number of students and teaching staff occupying it.*

- Crowding at Mildred Monroe is not an issue except for the problem associated with table-crowded self-contained classrooms (#6) as was previously mentioned. As teachers explained, children spend much of their evenings at home in crowded conditions, and coming to school and experiencing similar crowded conditions within the classroom is, to these teachers, not fair. Crowding, not unexpectedly, was seen as having an affect on student performance as well as their social development. Paradoxically, Mildred Monroe has many spacious designated rooms that could be taken advantage of more than they already are (additional class rooms, art room, auditorium, cafeteria), yet students spend the majority of their day in classrooms at tables teachers feel are too cramped for them.

APPENDIX A: ENVIRONMENTAL ISSUES

Issue No.	Issue Title	Issue Description

<u>High Priority Issues</u>

Issue No.	Issue Title	Issue Description
1.	"It's Too Hot!"	Within the school building it can be very hot and humid from late April to early May continuing until school ends in June. Often it can also be hot into the month of September. Students do not seem as affected as adults; they adapt, but at what cost? During test taking periods at the end of the year some classes are moved to more comfortable rooms.
2.	Urban Services Dumpster	The Urban Services dumpster and the landscaping adjacent to the school parking lot presents both an appearance and a health and safety issue. Children regularly play on old bed mattresses, chairs, and other large items left there by neighborhood residents. The school has had only minimal success dealing with several city agencies to get the trash removed. School custodians have responded by voluntarily removing larger items from around the Urban Services Dumpster, but this is only a short-term solution to a long-term problem.
3.	City Alley	For several years, a large mound of heaved pavement at the north end of the city alley has made it difficult and unsafe to access the school parking lot. The alley is in desperate need of repaving. In the meantime, teachers have adapted by entering the site from the south which is intended as a exit not an entrance to the parking lot.
4	Playground Safety	The existing playground is a liability issue for the school. Glass, condoms and other items are regularly found on the playground. Play equipment is old and damaged, while some of the equipment has been vandalized or stolen. As a result of the lack of playground equipment and space, for example, children often use the paved hillside on Urban Services property to slide down trays in the winter. Minor accidents have occurred in the past, but the school is concern that something more serious could happen. Replacement of damaged or missing equipment has not been possible.
5	Child Safety & Vehicular Traffic	There is an overlapping of functions on the site between the parking lot and playground area. Service vehicles and other visitors routinely cross traffic in the playground with children playing. Although there has never been an incident, there is a concern that there is the potential for accidents.
6	Classroom Tables	Tables, provided as a component of the previous educational program, are felt to take up valuable space in the self-contained classrooms. It was felt that six tables do not give teachers as many configuration options as the 28 desks. With the tables there are no places for students to put books and therefore they are stacked on tables, limiting the effective use of the working surfaces. In addition, there is very little elbow room when eight students are sharing a table designed for six, especially with older students.

| 7 | Lack of Personal Space for Students | Students do not always get the personal space they need, and as a result, several fights occur each week. Students have few options for personalizing their space. They have no desk to call their own, in many cases they share lockers with other students, and materials and supplies are stored in shoe boxes and placed in the corner of the room. |
| 8 | A "Quality Zero" Carpet | Rugs were given to all classroom teachers as part of the Tesseract program. One teacher, however, did not receive a rug, and was left with an old one that is difficult to clean. Students of this teacher spend many hours of their day on this carpet and therefore the need to replace it was seen as a high priority. |

Moderate Priority Issues

9.	Reoccurring Insect Problem	Although the insect problem has been addressed by the school it is still a reoccurring problem. Steps have been taken to resolve it.
10.	Locked Storage for Teachers' Personal Belongings	Not all teachers have keys to lock personal belongings in closets, nor do all teachers have keys to their classrooms. As a result, they have a sense of a lack of control in securing their belongings.
11.	Wall Hanging Problems	Due to the often high humidity in the building it can be difficult to secure wall hangings to painted concrete block walls. The desire for a tackable linear cork strip surface was discussed to resolve this problem.
12.	Developing Relationship with Custodian	Although several custodians respond quickly to requests, a few in the recent past have not. Counters are not washed. The work is not always seen as consistent. Teachers felt that there was too much turnover of employees at the school in the past few years. One teacher acknowledges that perhaps in the past, the teachers have not been specific in stating their needs.

Low Priority Issues

13.	Acoustic and Noise Problems in Bathrooms and Corridors	The noise in the bathrooms on both the first and second floors was seen as being louder that normal. Teachers have acknowledged that the noise is not all the students' fault. It is suspected that the noise problem is partly a result of the reverberations of students' voices against the hard surfaces in the building in general. Acoustical treatment in the bathrooms and hallways poor (tile, concrete and metal lockers).
14.	Acoustic and Noise Problems in Classrooms	Classrooms can be loud at times. Acoustical treatment in classrooms, similar to hallways and bathrooms, is poor: walls as well as ceilings are constructed of painted concrete block, while floors are tile with a small amount of carpeting. This issue was seen to be more easily addressed as a classroom management issue.
15.	Street Noise	The city sidewalk and street are close to all east classrooms. People can be heard outside causing some distractions for teachers and students. Playground noise can also be a problem for some, but not all classes. It was agreed that street noise is not something the teachers have much control over, and many schools have problems with street noise.

16.   Unsightly Windows   The existing shatter proof frosted Plexiglas windows are very unsightly. Occupants cannot see through them and get only minimal diffuse natural daylighting. Due to the metal bar cages on the first floor, the opportunity to open windows for ventilation in the hot and humid months is eliminated, causing much discomfort for both teachers and students.

17.   Unused Teachers'   The teachers' lounge is not used due primarily to its   remoteness to
       Lounge   classrooms, unappealing appearance as well as simply having a lack of adequate time for lunch. Currently, teachers eat their lunches in the air conditioned computer room or in their own rooms. It has been acknowledged by the administration that the teachers' lounge is in need of some renovation and possibly relocation, and steps are underway to improve these conditions for teachers.

18.   Stair Safety   The north stairwell is open to below and is seen as a bad design with respect to safety. There have been no major accidents, but the north stairwell has an open drop which could be unsafe for children. The staff has to watch that children do not fall.

19.   Threat of Intruders   A door buzzer and mirror help with security and incidents have dropped off in the past year, but often intruders still get by. Parents do not always stop in the office to receive passes since they feel they have special rights. Sometimes students may open doors for people. As a result, the school often experiences unknown people wandering the building. In many cases, intruders are known by individuals in the school.

20.   Problems with   In a few classrooms, computers were installed in such a way as to
       Computer Installation   block valuable bulletin board space. Computers could be placed back to back instead of along the wall.

21.   Difficulty in Conducting The building design does not allow for as much team teaching as the
       Interclass Projects   principal would like. However, the structure of building that would allow for team teaching might not be the structure that most teachers would be comfortable teaching [open plan]. Team teaching is not a high educational priority of this school.

22.   Cooperative Learning in   In self-contained classrooms, there is often no room for "activity
       Self-Contained   centers" and true cooperative learning. One teacher remarked that the
       Classrooms   school was built for row and column classrooms, not cooperative learning.

23.   Handicapped   There are currently no building codes or ADA regulations that would
       Accessibility   require the school to provide handicapped accessibility unless a building experiences major renovation, addition or alteration. However, the issue of providing access is of concern to the school. The school has no means of vertical transportation for the disabled, nor does it provide any ADA bathroom stalls.

Moderate Priority Issues

8.   Upkeep of Grounds   The upkeep of grounds has been a reoccurring issue for the school: the grass is not regularly mowed, and garbage collects along the fence lines of the school property. The responsibility for the grounds upkeep belongs to Baltimore City, and is not contractually a school task. In the desire to maintain the grounds at a minimum level of quality, the school custodian has unofficially assumed this task.

9.   Teachers' Lounge   The teachers' lounge could be more inviting and currently is not the kind of place teachers can go to relax or unwind. The couch wood frame is damaged and in need of repair, they need additional seating and table furniture, and the room needs to be better cleaned, organized and managed.

10.   ADA Accessibility   There are currently no building codes or ADA regulations that would require the school to provide ADA accessibility unless a building experiences major renovation, addition or alteration. However, the issue of providing access is of concern to the school. The school has no means of vertical transportation for the disabled, nor does it provide any ADA bathroom stalls.

Low Priority Issues

11.   Cafeteria/ Auditorium Divider Partition   The divider partition between the cafeteria and the auditorium is in functional disrepair and is in need of replacement.

12.   Need for Additional Electrical Outlets   Some teachers felt that there were not enough electrical outlets (currently three to a room) and special outlets in anticipation of special equipment and computers to make the classroom adaptable (recently twelve computers were donated for classroom use). A cable wiring project started and stopped without being completed.

The Environmental Quality Assessment Project
Baltimore City Public Schools

Case Study Report
Harriet Tubman Elementary School #138

PROJECT OVERVIEW

This report documents specific environmental quality concerns of one of five elementary schools in the Baltimore City Pubic Schools. This report serves not only as a record of the environmental quality concerns themselves, but also describes the assessment process within which these concerns have arisen.

This section provides an summary of the project objectives, problem and approach, and process and procedures of the Baltimore Environmental Quality Assessment Project.

Objectives

The objectives of the Baltimore Environmental Quality Assessment Project project were to:

- develop an occupant-driven environmental quality assessment process through which environmental quality concerns can be creatively identified, addressed and influenced by school occupants themselves.

- assess environmental quality from the perspective of the experiences of students, teachers, staff, administrators, and parent volunteers in each of five Baltimore City Public Schools that chose to participate in this project;

- understand how environmental quality may or may not contribute to the educational process in each school with respect to Student Academic Performance, Student Social Development, and Teacher Instructional Performance; and,

- understand the role of facility management in maintaining and improving environmental quality.

For Harriet Tubman Elementary School #138, this report documents specific aspects of environmental quality of concern to the school. The assessment process was not conducted to judge the final worth or merit of the school as it relates to environmental quality. Rather, the intent of this project was to provide information useful for improving the environmental qualities of the school, especially those that may have some impact on the effectiveness of the educational process. It is the hope of all involved, that the results of this study be considered an affirmative step toward improving environmental quality at Harriet Tubman.

Each school case study investigation followed a research process in which a selected number of teachers and administrators participated in actively clarifying the scope of the project, identifying and prioritizing environmental quality problems, issues and concerns, and formulating strategies for addressing these concerns.

The report that follows briefly summarizes the project activities and assessment process conducted within a five month period between August, 1995 and December, 1996. Any mention of individual names are fictitious to protect the anonymity of participants in the study.

. In August of 1995, Harriet Tubman Elementary School agreed to participate in the Environmental Quality Assessment Project.

During a visit on September 21, 1995, a physical inventory and preliminary walkthrough of Harriet Tubman was conducted, along with interviews of the principal and the head custodian.

During a visit on October 24, 1995, a full day of observation was conducted which included behavior mapping, informal and formal interviews with teachers and photographic documentation of the school-in-use. In addition, 45-minute semi-structured interviews were conducted with three classroom teachers and one instructional specialist. Each teacher was asked to fill out a teacher survey-worksheet, as well as to administer a student survey.

Prior to the final visit on February 12, 1996, information gathered from the previous visit was tallied and organized into a series of potential environmental quality issues to be discussed during the workshop. Workshop materials included a list of all issues, floor plans showing the location of issues throughout the building, a presentation board containing photographs of problem areas. Also included were individual issue cards and a blank matrix worksheet for ranking issues by priority (high, moderate, low) and the potential impact, if any, on one of three educational outcomes (student performance, social development, teacher performance). The workshop, with a working group of four teachers and the assistant principal, lasted a total of 90 minutes.

In the following Spring, a teacher survey was administered to gather further information regarding teacher perceptions of environmental quality.

TAKING OWNERSHIP

Harriet Tubman Elementary School #138 is a Pre-K through 5 school, serving 450 students from the neighborhood with a total teaching staff and support staff of 45. The educational program emphasizes cooperative learning and is supported in that effort by the Success For All program run by John Hopkins University. The school practices strategies for age appropriate learning as well as advocating the Dimensions of Learning philosophy.

The school is located northeast of the central business district by approximately two miles and serves the Harlem Park Neighborhood a large African American community designated as an Empowerment Zone. Baltimore is only one of four cities to receive the designation by the federal government as an Empowerment Zone which entitles each of these select communities to $100 million in federal grants. Baltimore has identified 112 initiatives intended to transform these neighborhoods.

Harriet Tubman is also part of the Baltimore City's Enterprise Schools Program, one of 34 public elementary, middle and high schools designated to be self-governing in the management of their financial resources, personnel, curriculum, educational policy and facilities. A School Improvement Team (SIT) has been formed in each of these schools to provide policy and management oversight, program assessment and mobilization of the community's participation.

Unfortunately, even with all of the positive support, Harriet Tubman currently finds itself struggling with problems of community and parent involvement, while simultaneously trying to increase already low achievement scores. As of February of 1996, the school, along with 34 other low performing schools, has been threatened by Reconstitution (the take over and restructuring of the school by the State of Maryland).
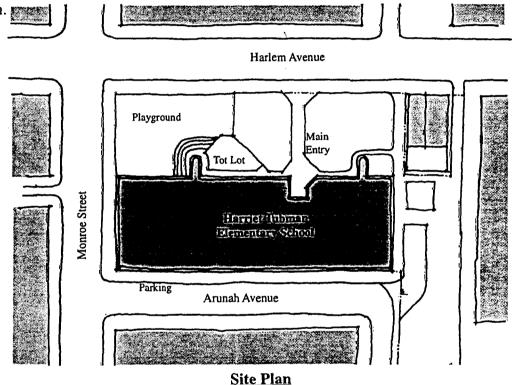
Overarching this challenge are the social problems in and around the Harlem Park neighborhood which, like many other Baltimore City Public Schools, have gotten worse over the past few years. Although many of these problems, literally outside school doors, have on rare occasions found their way in, the school has successfully maintained a highly-spirited atmosphere, and a positive and safe learning environment for children of the neighborhood.

View of the front entrance to Harriet Tubman Elementary School off Harlem Avenue

· The two story brick 44,800 square foot building that the school occupies on the corner of Harlem Avenue and Monroe Street is surrounded by early 1900's brick rowhouses, a quarter of them being boarded up and abandoned. Like many Baltimore City neighborhoods, this neighborhood is experiencing increasing mobility rates among its African American population. Many families in this community are in social and economic crisis; it is not uncommon to find grandparents raising their children's children.

Harlem Avenue

Monroe Street

Playground

Main Entry

Tot Lot

Harriet Tubman Elementary School

Parking

Arunah Avenue

Site Plan

Harriet Tubman, constructed in 1979, replaced the original turn of the century school building (previously called Robert Fulton) located just north on the same site. Many of the teachers from that original school continue to teach at Harriet Tubman. One of these teachers, Ms. Bailard, remembers when the school was first being planned and public hearings were being held: she was involved in the original planning process, and admits she and other teachers did not get all of what they had hoped for, including a recreational center. Ms. Bailard recalls Baltimore City school officials and architects advocating an open plan school which was at the time a very popular concept embraced by school districts around the country. Many of the teachers and some residents within the community lobbied against the open plan concept claiming that open space was not what their children needed; they required a more structured learning environment. According to Ms. Bailard, the group lost the debate due to the lack of community involvement and

support; they were unable to sway school officials from their intended plans. This lack of community involvement and ownership in the school continues to this day.

Parental involvement has always been low at the school, although with a new parent liaison, there is some hope; there are as many as eight parents that the parent liaison can rely upon for support. As Ms. Bailard explains, "They just drop off their children and walk away...they won't get involved."

Another area still being explored by the principal, Ms. Kavelaris, is the shared use of the school's facilities with the community. The school recently contracted with TLC Daycare to lease gymnasium space, in order to provide after-school daycare for neighborhood families. Unfortunately for the school, the daycare provider leaves their furnishings, materials and supplies in the gymnasium when they are not there causing problems for teachers wanting to use the gym for recess. What started as good intentions, providing desperately needed services to the community, has caused unanticipated space use problems and contractual problems between the school, Baltimore City and TLC.

Although there are many factors at play contributing to the overall quality of the educational process at Harriet Tubman, gaining the support of the neighborhood community is a challenge Harriet Tubman does see itself capable of meeting.

A DAY IN THE SCHOOL

"We had a couple of trees planted in the front yard area for a teacher that passed away, and the kids tried to take care if it...but, others would hang on the trees and break the limbs and now one tree looks like a twig...a stump in the ground that's all it is." [Teacher, Harriet Tubman]

The condition of the school grounds is yet another element illustrating a lack of community ownership in the school. Despite the custodian's efforts, the building grounds are in terrible shape. Grass has been fenced in to protect it, but this strategy has not worked. The center of the fenced in area has been worn down to dirt, and is used as a large garbage can for the neighborhood residents within which to throw broken bottles, cans, used paper products, bits of clothing, gang graffiti and sometimes drug paraphernalia. Glass from broken bottles have over the years, become imbedded in the ground. In ad-

View of front playground area with residential neighborhood in background.

dition, the trash is not regularly picked up by Baltimore City contributing to the problems with school appearance. The fencing is literally falling apart as students play on it, damaging it even further. Requests to have the fencing repaired have been submitted for some time.

The playground in front of the school contains a basketball court used by neighborhood adults for recreational games which consequently sets the stage for open-air drug dealing across the street at a corner bar. One teacher comments, "Sometimes it looks like they had a war with soda bottles, you know...on the weekend you come back, there's soda bottles, beer bottles, there's a very strong smell of urine right near the side stairwells...they write all over the walls...horrible things they put on walls, pictures of things that shouldn't be put on walls." For example, the tall and prominent orange-painted metal stair towers, one located directly near the basketball court, are frequent recipients of graffiti as well.
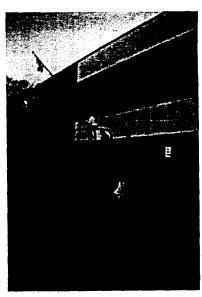
Children play on damaged fencing outside the main entrance to the school

As Mr. Hall, a teacher participating in the working group summarizes, "The school is used by the community, and even though they consider it their school too, they don't take care of it." Mr. Crawford, the head custodian, recognizing the state of the building grounds states, "We go out everyday to contain that...its very hard, very hard." One teacher, defending the custodian, explains, "I used to have a group of kids that would come out and clean up two or three days of the week. We'd go out in the morning just to help the custodians who couldn't do all of this". The principal, Ms. Kavelaris, adds, "I would like to see the outside environment be more attractive," but admits the problem may be due in part to the structure of their custodial contracts which require custodians to work at more than one school as well as some recent budgetary cuts and changes in responsibilities between Baltimore City and Enterprise schools. Nevertheless some teachers feel there are plenty of people to do this work now, and as one teacher claims, "Our grounds should be kept better than they are."

Ms. Kavelaris mentions that she deals with facility management issues, "... more than I want. I don't want to talk about panic bars, to me that's not exciting, but I know its in my purview. But, I'd like it to be dealt with and be gone so that our focus can be just on academics. So, I'm not happy when I have to make a case about something we expect to be working and its not work-

Children play on outdated and unsafe playground equipment.

ing." She estimates that her attention to facility management issues may account for as much as 10 to 15% of her workload as principal.

Again, like many Baltimore City Schools there is a lack of adequate playground equipment. As Ms. Kavelaris remarks, "We are hopeful that at some point we realize a playground; that is a major focus and concern of ours; that we don't have adequate outdoor play equipment." Mr. Hall, a classroom teacher adds, "The playground needs to be resurfaced for young kids to cushion their fall; they need some thing out there besides that jungle gym...I hate that thing." Current estimates for a new playground are running into the thousands of dollars, much more than the school can afford with its present budget.

"A lot of children know what's happening in this neighborhood...if you get them to write, some of our children [will say they] are afraid of being shot, or being hurt in their neighborhood and that's something to think about, you know, children should feel safe if they are playing outside in their neighborhood or whatever, but our children don't, they know what's happening." [Parent Volunteer, Harriet Tubman]

Harriet Tubman, while trying to conduct the business of learning has had to patiently weather a series of recent incidents around their school. In one particular situation in the Fall, police, using the second floor teacher's lounge, staked out and successfully caught an open-air drug dealing operation across the street — the results of which were aired on local television.

Not more than a week before the workshop, a tragedy occurred directly adjacent to the school grounds, claiming the life of one child. As one parent volunteer explained, "From what I heard, mom and friend was in there smoking crack — the little boy did not start the fire — mom and friend were doing crack and it must of gotten out of control or something... the precious little baby was not saved." The house, located only feet from the school grounds was under suspicion for drug dealing.

The quality of the neighborhood is an environmental factor that is constantly challenging Harriet Tubman to come up with new strategies. Despite these challenges, the principal, Ms. Kavelaris, states that "within and around the school, we consider ourselves very safe," and insists that the climate or "tenor of the building" is positive, that students want to be there, that teachers are able to "execute their skills," that the building is clean and lacks infestation and that they have many social programs such as conflict and peer mediation that help alleviate the problems that do manage to get into the school. Many of the teachers have a similar opinion. As Ms. Kavelaris muses, "I'm never satisfied, but try to celebrate the small successes we do have."

Prior to the school opening, children arrive at the school site and begin running on the playground, climbing the old steel jungle gym, and climbing on the metal play sculptures located within the fenced in grassy area of the school grounds. Gradually, parents

with younger children arrive at the school doors as they open promptly at 8:00 AM for breakfast.

Students enter the main entrance off Harlem Avenue directly into the small lobby that acts as a public zone leading only a few feet to the left to the cafeteria and directly ahead to the glass enclosed main office. To the right are double doors leading to the first floor instructional areas and the main stairs to the second floor. This main entrance lobby can get quite busy in the morning.
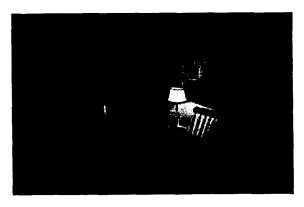

View looking from Lobby back toward the entrance vestibule. Chairs and tables, displays and announcements line the vestibule making it an inviting place to enter.

Beyond the concerns over the building grounds, several places exist within Harriet Tubman that succeed in creating a characteristically comfortable and inviting atmosphere.

As was mentioned earlier, the vestibule, main lobby and office areas offer a rich and inviting communal feel as people come and go even though it is a fairly restricted space. From the main office, staff can see directly to the outside spotting arriving visitors. The presence of chairs in the small vestibule, not more than ten feet square, extends the welcoming feeling right to the front doors of the school. Often parents and grandparents will wait in the vestibule for their children, nodding to other visitors as they pass.

Directly off the main lobby is the main stair leading up to the second floor instructional area. At the foot of the stairs is a small, yet inviting place called the Volunteer Listeners corner for parent volunteers to read to small groups of one or two children. The carpeted area contains two deck chairs, a rocking chair, a small table with a lamp, various framed wall hangings and a children's book storage rack presumably borrowed from the library. In effect, this place acts as a small reading nook. During the Christmas season when it is too cold in the main stair, the school Christmas tree is placed here to be viewed by all that walk up and down the stairs during the holiday season.

The makeshift Volunteer Listeners corner provides an example of making use of a commonly wasted space.

Finally, the library, located at the top of the main stair, acts as a buffer between Pods B and C, creating an island of calm amidst the active classrooms to the east and west. In

essence, the library is like the big living room of the school, with a big TV screen and VCR located just to the right of the librarians desk. There is also room in front of the TV for as many as two classes at anyone time.

After breakfast, students and others just arriving begin to flow into their respective instructional areas. Parents escort their children directly from the main lobby into the first floor self-contained Kindergarten classes, while older students begin to form lines to walk up to their second floor instructional areas and classes. It can get rather crowded in the main lobby and main stair leading up to Pods B and C, but teachers and students have learned the routine and everyone efficiently moves to their respective places to get ready for a day of learning and teaching.

At the top of the main stair, a welcome mat and signage make you feel you have arrived somewhere special.

The school is organized into both self-contained classrooms and open space instructional areas. The first floor, containing approximately 12,000 square feet, includes three self-contained kindergarten classrooms each of which is 1,200 square feet, a self-contained Music Room, and a single open space pod (Pod A) containing four instructional areas of approximately 26,000 square feet occupied by 2nd and 3rd Grade classes. The remainder of the first floor is devoted to the administrative office wing and the cafeteria, kitchen, and mechanical spaces.
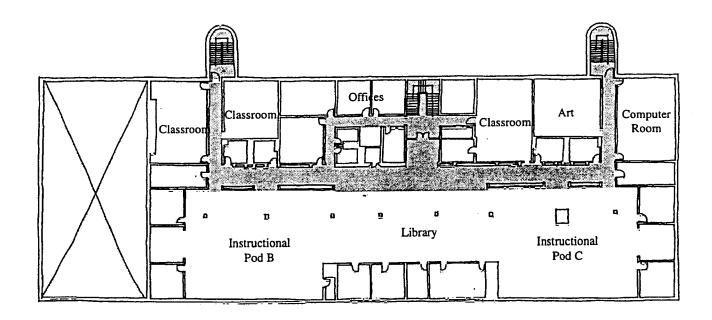
On the second floor, a central corridor cleanly divides self-contained classrooms from open instructional areas. A large media center, positioned in three successive structural bays, is located directly off the main stair and is centralized in plan, effectively separating the two main open space Pods (Pods B and C), each containing four classes: Pod B containing 1st and 2nd Grade students, and Pod C containing 4th and 5th Grade students. Various self-enclosed support spaces adjacent to these Pods serve as supplemental classrooms for special small group or one-on-one instruction. There are a total of four self-contained classrooms, one for each
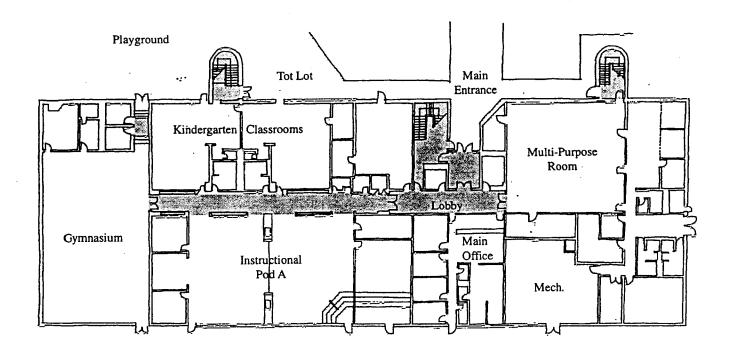

The Library/Media Center effectively divides Open Space Instructional Pods on the second floor

3rd, 4th and 5th Grades, one for DEC students), and one computer room. In addition, a faculty lounge and other supplemental staff offices are located adjacent to these self-contained classrooms.

Offices
Classroom
Classroom
Art
Computer Room
Classroom
Classroom

Instructional Pod B
Library
Instructional Pod C

Second Floor Plan

Playground

Tot Lot

Main Entrance

Kindergarten Classrooms

Multi-Purpose Room

Lobby

Gymnasium

Instructional Pod A

Main Office

Mech.

First Floor Plan

Currently, there are no standards for the size of academic learning areas which vary from state to state. However, one organization has begun to rethink the sizes of educational spaces. In their Guide for School Facility Appraisal, the Council for Educational Facility Planners International (CEFPI) state, "New forms of instruction require greater amounts of space than in the past. Special education, remedial classes, cooperative learning, and community participation all create spatial requirements that differ from earlier periods of education." CEFPI recommends the following: The "building capacity" of an elementary school (the number of students capable of occupying a school facility) can be measured by taking the total gross square feet of the facility and dividing by 90 GSF/student (90 GSF being a CEFPI recommended number). The recommended gross square footage per student for kindergarten and pre-kindergarten classes are: minimal 30-35 GSF/student, acceptable 36-40 GSF/student, ideal 40-48 GSF/student. The recommended gross square footage per student for elementary classes: minimal 23-27 GSF/student, acceptable 28-30 GSF/student, ideal 31-36 GSF/student.

Taking these standards as a means of assessing the conditions at Harriet Tubman, the school building is below its capacity of 498 students at 420 students (at the time of the assessment). Pre-kindergarten and Kindergarten classrooms are 'ideal' at 45 gross square feet per student. While, the First through Fifth Grade classrooms are 'acceptable' at 29 gross square feet per student.

At Harriet Tubman, hall passes are routinely used and if teachers do not recognize a visitor they look immediately for evidence of the pass. They have good reason to be especially strict about this pass policy. Over the last few years, intruders, often disguised as visitors were responsible for a number of thefts, including pocket books and purses from teachers' classrooms, computers, and a VCR and microwave from the teachers lounge. It was discovered that often, many intruders would enter the stair towers, identify an item they wanted, then, as one teacher states, "They knock us down, taking things out of here," often right through the front door. With a change in policy, having the egress doors locked when the school is not in session as well as providing a buzzer on the front door, the problems have decreased substantially. No one from the working group knew of any incidents since the new policy has been implemented. In addition, during dismissal, students on the second floor are all dismissed via the central stairs in shifts, since it was not uncommon to find students from different schools sneaking into the building. To cut down on the possibility of this problem, only students on the first floor are exited out the stair towers before they are locked. This does result however, in substantial congestioin at the main stair in the morning and at dismissal, even with the shifts.

Once students get settled into their respective classrooms, things begin to quiet down as they get to work on various projects at their table groups. Classrooms on both the first and second floor are very colorful and bright. Every available surface is covered with student work and other instructional displays. Where a teacher does not have sufficient

wall space, they will hang student work and other instructional displays from the acoustical tile ceiling, creating yet another visual, if not chaotic-looking barrier from other neighboring classes. Architecturally, columns and sink counters visually divide instructional spaces into well-defined areas. Bulletin boards are used to delineate boundaries between classes. In most classes, desks are arranged in table groupings of four, one physical indicator of a cooperative learning instructional strategy. Many teachers work with their students in small groups in one corner of the instructional area.

One of the highest priority issues identified by teachers were problems with open space. Although most admitted that open space promotes collegiality among teachers, noise and distraction continue, even with the recent purchase of new portable bulletin boards. A previous principal had enforced a strict policy of openness and would not allow any partitions or dividers at all; they are now all very appreciative of the efforts of the present principal to address their concerns over open space.

Pod C, where Mr. Hall is located, has not yet gotten the new bulletin boards. As he explains, "You can see all the way from one end to the other in this school and the kids are easily distracted by activities going on in the classroom right next to you." Several teachers, attempting to solve this problem often use auxiliary spaces, such as art or music or the cafeteria for louder activities.

Due to a lack of wall space, teachers use any means necessary to display student work and other visuals including hanging posters from the ceiling.

An additional problem of the open space plan is that there is no wall space for teachers to display materials and student work. Several teachers also complain that there is an inadequate amount of chalkboard space as well as no locked cabinet storage in the classroom itself for classroom materials or personal belongings.

Adding to the instructional concerns is the loss of one teacher position last year, leaving no one to manage the computers located off each Pod in the second floor. To resolve this issue, the principal has discussed the possibility of distributing the twelve computers directly into the classrooms.

An open space instructional area that has inefficiently captured a temporarily abandoned space.

The teacher position was eliminated due to changes in enrollment, and although Harriet Tubman lost a computer manager, they gained the instructional space in Pod B on the second floor. However, this space has been haphazardly taken over by Ms. Alton as a small group instructional area and not used as effectively as it might be. Where one might expect to find activity centers and other small well-defined instructional spaces, the space is instead occupied by a few desks and various classroom materials stored in boxes and on shelves, and was observed to be rarely used. It may be possible, as Ms. Alton suggested, to find a way to more effectively share this additional space with teachers from the other two instructional areas.

Generally, there were no concerns with self-contained classrooms. However, one self-contained kindergarten classroom teacher has experienced some problems. Ms. Zebel's class of 25 students occupies a classroom of 864 square feet that contains a stepped platform occupying a third of the room making table layouts awkward. What makes the platform area unusable is its narrow width, 5 feet, not enough for small group activities. The

One self-contained classroom is tight due to the design of a platform that takes away room that would otherwise be used for small group instruction.

space on the steps acts as a storage area for materials and supplies in what could be described as organized clutter. In addition to the tightness of desks, there is not room for a dedicated gathering space in the area that remains.

" It was cold enough to wear gloves...a couple of children had gloves on, and I told them to please take them off because you won't be able to do your work. . .when you're cold, what do you do, or what do you want to do?"   [Third Grade Teacher]

The most often discussed environmental quality of concern for the working group at Harriet Tubman was the constant problems with the thermal environment. Parts of the building have continual problems with heating in the winter, while other parts of the building suffer from being too cold in the spring and fall months. One teacher from the working group describes how thermal comfort affects her students, "Sometimes when its too cold in here, children will shiver, be restless and will not be listening." Just the opposite has been experienced when it becomes warm in parts of the building. As another teacher describes "The children will start slouching, and just won't pay attention." One teacher speaking for the working group stated, "This is our No.1 concern."

Air circulation and dry air are also a common complaint with teachers. One of the teachers in the working group claimed to have, in the past, experienced throat problems; she was getting horse and went to her doctor who asked immediately about the environmental conditions at her school. Teachers strongly suspect that the mechanical system is

a major factor affecting the health of all occupants in the school.

Associated with the lack of control teachers feel over their thermal comfort is their inability to get fresh air flow. This concern has created problems with poorly ventilated bathrooms, and stale and dry air. The principal has installed vanilla-scented air fresheners that do help, but are only a quick fix for the real problem of inadequate indoor air quality that remains to be addressed.
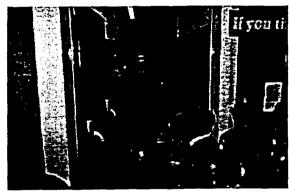
"I wanted to do a science experiment with seeds, but I couldn't get anything to grow since the daylight is so poor coming through the Plexiglas windows so I had to go out and buy a grow lamp." [Second Grade Teacher]

The custodian is keenly aware of thermal comfort problems and tries to alleviate them for the teachers however he can. When it gets warm, the custodian will unlock the windows to get some relief to a localized part of the building. Even when the custodian opens a window, one teacher located further in the interior of the building remarks, "If there is a nice breeze coming through the window I can't feel it."

Unfortunately, the windows are typically locked and even daylight coming through the windows is defuse and unsatisfying to teachers, not just aesthetically, but educationally as well. In the case of the failed science experiment, the teacher was additionally frustrated by the fact that there was no place on the window sill wide enough to put the plants.

Dismissal creates a frantic rush for the exits, but here again, the orderly procedures of the school prevail. Student classes are escorted to the three primary exits, the main stair and exit and the two stair towers. All students on the first floor exit through the stair towers, while all students on the second floor exit via the main stair in shifts.

The main exit stair can get congested during the beginning and end of the school day.

Students rush to the same playground areas at the end of the day as at the beginning, playing not only on the aging jungle gym, but also climbing in groups onto the sculpture, running around on the basketball court, swinging from the fence frames and sitting on the deformed fencing itself. Ironically, after all the concerns teachers have for the children, in the minds of the children, this is a great place; this is their

FINDINGS & DISCUSSION hood.

The previous section describes in some detail the more critical of the twelve (12) distinct environmental quality issues of concern at Harriet Tubman Elementary School identified by the working group (See Appendix A for a complete listing and summary of these issues).

Some of these issues overlap and in some cases, contradict each other. For instance, the desire for natural daylighting, fresh air and outdoor views were often overruled by more critical needs for security from potential intruders, which dictated the locking of first floor windows. To further understand the implications of these issues on the educational process, through the assistance of the working group, issues were categorized by (a) ten attributes of environmental quality, and (b) their potential influence on three broadly defined educational process outcomes: student performance, student social development and teacher instructional performance.

Ten distinguishable attributes of environmental quality have emerged from the intersection of the researchers' findings in Baltimore City Public Schools and what is known from previous research literature. Not only was there a desire to understand the nature of the interaction between the various attributes of environmental quality, but the appraisal of teacher perceptions of the potential influence on the educational process was desired as well. What follows is an analysis of the relationship between these attributes of environmental quality, the issues raised in the working group and their perceived potential impact on the three educational process outcomes.

1. Physical Comfort and Health *refers to the degree to which occupants feel the indoor environment meets your physiological needs with respect to thermal and air quality, illumination, noise and odors.*

• Physical comfort and health was another environmental quality mentioned frequently by the working group as affecting student performance, social development and teacher performance in the case of the high priority issue Too Hot, Too Cold (#8).

• Dissatisfaction with Open Space (#1), a high priority issue, also illustrates a physical comfort and health quality in that visual and acoustic distractions were seen as affecting students' and teachers' ability to concentrate on their tasks potentially influencing student performance and well as teacher performance.

• Bathroom Ventilation (#10) although a problem, was identified as a moderate priority that did not affect any of the three educational outcomes under investigation.

2. Classroom Adaptability *refers to the degree to which occupants feel that the physical classroom space can be adapted to different and desired educational activities and functions.*

• Classroom adaptability was the second most mentioned environmental quality of the ten as described by the high priority issues of Dissatisfaction with Open Space (#1), Inefficient Self-contained Classroom (#2), a moderate priority issue of Non-use of Computer Nooks (#9), and a low priority issue of Inefficient Use of Open Space (#11).

• Classroom adaptability was seen as potentially related to student performance through evidence of Dissatisfaction with Open Space (#1), Non-use of Computer Nooks (#9), and Inefficient Use of Open Space (#11).

• Finally, classroom adaptability was identified by the working group as potentially affecting teacher performance as demonstrated by the issues of Dissatisfaction with Open Space (#1), Inefficient Self-contained Classroom (#2), and Non-use of Computer Nooks (#9).

3. Safety & Security *refers to the degree to which occupants feel the school building contributes to protecting occupants from harm, injury, or undue risk.*

• Safety and security issues were one of the most often mentioned environmental qualities for the working group. All five environmental quality issues — Congested Stair/Main Lobby (#3), Lack of Playground Equipment (#4), Lack of Adequate Tot Lot Area (#5), Upkeep of Grounds (#6), Psychological Safety on Building Grounds (#7) — were of high priority for teachers.

• The safety and security issue of Psychological Safety on Building Grounds (#7) was identified as potentially affecting student performance, social development and teacher performance in that experiences brought into school by students and teachers could adversely affect their ability to focus on the tasks of learning and teaching.

• The safety and security issues of Lack of Playground Equipment (#4) and Lack of Adequate Tot Lot Area (#5) were both seen as limiting opportunities for student social development.

• The environmental issues of Upkeep of Grounds (#6) and Congested Stair/ Main Lobby (#3) were seen by the working group as concerns not directly related to any of the three educational outcomes.

4. Building Functionality *refers to the degree to which occupants feel the various places within the school building are functionally compatible with your school's educational programs and activities.*

- As building functionality issues, Lack of Playground Equipment (#4) and Lack of Adequate Tot Lot Area (#5), both high priority issues, were perceived as having a potential to influence social development.

- Both building functionality issues, Congested Stair/Main Lobby (#3) and ADA Accessibility (#12) were not seen as having any particular influence on the three educational outcomes.

5. Aesthetics & Appearance *refers to the degree to which occupants feel the school building is attractive and provoking.*

- The environmental quality issues of Upkeep of Grounds (#6) and Lack of Playground Equipment (#4) were both seen as issues of poor aesthetics and appearance. In the case of Lack of Playground Equipment (#4), the working group saw this environmental quality associated with social development.

6. Personalization and Ownership *refers to the degree to which occupants feel the school building offers opportunities to create a personal and self-expressive environment and engender a sense of ownership.*

- Upkeep of Grounds (#6) was the central environmental quality issue around which most discussion of personalization and ownership qualities of the school revolved. The working group concluded that many members of the surrounding community have not taken ownership of the school grounds.

- Within the school, teachers provide many opportunities for students to personalize their classrooms by displaying student work, and to take ownership of their school through sharing in classroom clean-up routines.

7. Social Places (Places for Social Interaction) *refers to the degree to which occupants feel that places within the school building provide opportunities for meaningful social exchange and interaction.*

- The only issue attributable to the quality of social places identified by the working group was the Inefficient Self-contained Classroom (#2). The design of the stair steps across the back of the classroom limits available room for accommodating both classroom tables and a small group instructional floor area. A key

feature of the kindergarten classroom, a floor area able to accommodate the full class has been compromised. This lack of small group floor space has hindered the teacher from conducting certain instructional activities.

- Although not mentioned by the working group, the main lobby and administrative office area was found to be one of the more successful social places within the school. This area encourages a great deal of informal social exchange between teachers and staff, parents, students and community. Much of the success of this series of spaces are made possible by their close proximity to one another, and their relatively high trafficked density. Although at times this area would get quite congested and was an issue of concern, it still provided one of the more successful social places in the school.

8. Privacy *refers to the degree to which occupants feel that there are places within the school building which provide opportunities for an individual or a small group to be free from the intrusion of others.*

- The issue of privacy was not of main concern to the working group. The working group felt that even thought students did not have many opportunities for privacy, if it was really needed, in the case of social conflicts, they could be sent to a supplemental staff member's room, or simply be removed from the larger group for a few minutes.

9. Sensory Stimulation *refers to the degree to which occupants feel the school building provides a stimulating environment for learning that is safe yet challenging.*

- The working group was satisfied with the quality of sensory stimulation in their school and saw it as potentially supporting student performance and social development.

10. Crowding/Spaciousness *refers to the degree to which occupants feel the school building cannot adequately accommodate the number of students and teaching staff occupying it.*

- One factor within the school contributing to a sense of spaciousness is the layout of the second floor with the media center acting as a buffer between Pods. Within instructional areas in the Pods, class densities for Grades 1-5 averaged over 30 square/feet per student.

APPENDIX A: ENVIRONMENTAL ISSUES

No.	Issue Title	Issue Description

High Priority Issues

1.	Dissatisfaction with Open Space	Open space promotes collegiality among teachers, but noise and distraction continue even with some new portable bulletin boards. There is no wall space so teachers must hang posters from the ceiling, there is also inadequate chalkboard space, and no locked cabinet storage in the classroom for instructional materials or personal belongings.
2.	Inefficient Self-contained Classroom	One self-contained kindergarten classroom on the first floor has a platform in the room that makes layouts awkward: the sink is too high for children to use, there is no room for a dedicated gathering space, and the space on the steps is wasted space and used for storage.
3.	Congested Stair/Main Lobby	There is often congestion as students enter the main lobby stair during the morning and at dismissal. A single-leafed door that leads out from the stair contributes to this problem at dismissal. This congestion could be a problem if a fire occurred. Lighting may be insufficient in the stair tower.
4	Lack of Adequate Playground Equipment	The school does not have adequate playground equipment. Teachers feel that aging monkey bars and one basketball court do not constitute a true playground.
5	Lack of Adequate Tot Lot Area	One teacher explains that she has no tot lot to take her students out to, so she uses the sidewalk on the south side of the building and moves a sandbox outside in warmer weather.
6	Upkeep of Grounds	All occupants in the school are aware of the state of the exterior ground of the school: glass, uncut grass, damaged fencing, peeling paint on of stair towers, graffiti, slow trash pick-up, lack of neighborhood ownership and playground equipment were the main issues mentioned.
7	Psychological Safety While on Building Grounds	Everyone feels safe in the school, but some do not feel safe outside due to open-air drug dealing, misuse of school grounds by adults in the evening, and car thefts.
8	Too Hot, Too Cold	Parts of the building have continual problems with heating in the winter, while other parts of the building suffer from being too cold in the spring and fall months. Teachers have limited perceived control over temperature fluctuations.

Moderate Priority Issues

9. Non-use of Computer   No use of computers on the second floor computer areas were
    Nooks   observed on either side of the building.

10. Bathroom Ventilation   Ventilation in the bathroom not operating/ working as they should;
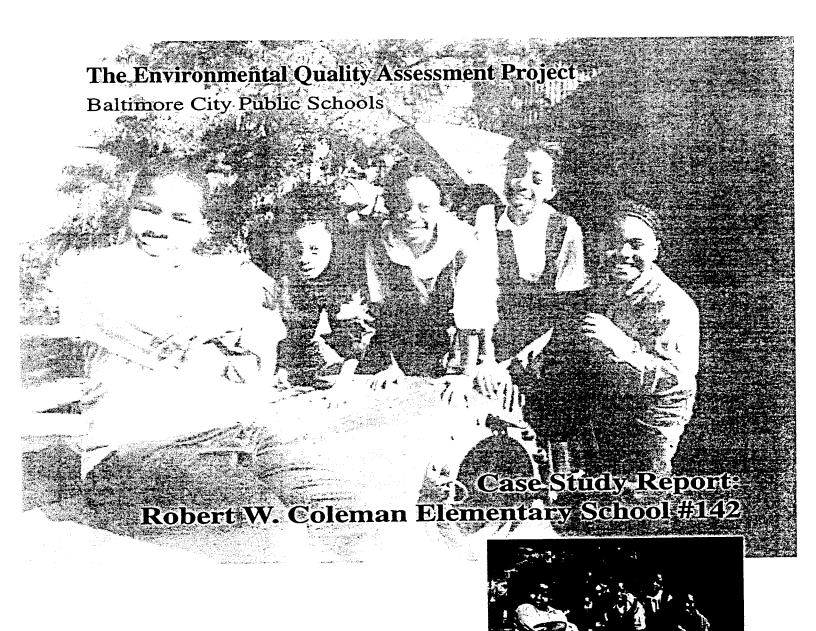   fan motors were not operating, although a work order had been placed.

Low Priority Issues

11. Inefficient Use of Open   Space utilization is poor on the second floor in one open space
    Space   instructional area, caused by the loss of a teacher position due to a
                               change in enrollment. The issue was raised to how might left over
                               space be shared among other teachers in the Pod.

12. ADA Accessibility   Existing bathrooms do not meet ADA handicapped accessibility code
                               (Note: There are no state of federal regulations requiring ADA
                               compliance in older existing buildings unless there is major structural
                               change)

The Environmental Quality Assessment Project

Baltimore City Public Schools

Case Study Report: Robert W. Coleman Elementary School #142

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PROJECT OVERVIEW

This report documents specific environmental quality concerns of one of five elementary schools in the Baltimore City Pubic Schools. This report serves not only as a record of the environmental quality concerns themselves, but also describes the assessment process within which these concerns have arisen.

This section provides an summary of the project objectives, problem and approach, and process and procedures of the Baltimore Environmental Quality Assessment Project.

Objectives

The objectives of the Baltimore Environmental Quality Assessment Project project were to:

• develop an occupant-driven environmental quality assessment process through which environmental quality concerns can be creatively identified, addressed and influenced by school occupants themselves.

• assess environmental quality from the perspective of the experiences of students, teachers, staff, administrators, and parent volunteers in each of five Baltimore City Public Schools that chose to participate in this project;

• understand how environmental quality may or may not contribute to the educational process in each school with respect to Student Academic Performance, Student Social Development, and Teacher Instructional Performance; and,

• understand the role of facility management in maintaining and improving environmental quality.

For Robert W. Coleman Elementary School #142, this report documents specific aspects of environmental quality of concern to the school. The assessment process was not conducted to judge the final worth or merit of the school as it relates to environmental quality. Rather, the intent of this project was to provide information useful for improving the environmental qualities of the school, especially those that may have some impact on the effectiveness of the educational process. It is the hope of all involved, that the results of this study be considered an affirmative step toward improving environmental quality at Robert Coleman.

Each school case study investigation followed a research process in which a selected number of teachers and administrators participated in actively clarifying the scope of the

project, identifying and prioritizing environmental quality problems, issues and concerns, and formulating strategies for addressing these concerns.

The report that follows briefly summarizes the project activities and assessment process conducted within a seven month period between August, 1995 and February, 1996. Any mention of individual names are fictitious to protect the anonymity of participants in the study.

In November of 1994, Robert Coleman Elementary School was the first school to agree to participate in the Environmental Quality Assessment Project.

During the first visit on July 28, 1995, a physical inventory and preliminary walk-through of Robert Coleman was conducted, along with interviews of the principal and the head custodian.

During the second visit on September 18, 1995, a full day of observation was conducted which included behavior mapping, informal and formal interviews with teachers and photographic documentation of the school-in-use. In addition, 45-minute semi-structured interviews were conducted with three classroom teachers and one instructional specialist. Each teacher was asked to fill out a teacher survey-worksheet, as well as to administer a student survey.

Prior to the third visit on October 25, 1995, information gathered from the previous visit was tallied and organized into a series of potential environmental quality issues to be discussed during the workshop. Workshop materials included a list of all issues, floor plans showing the location of issues throughout the building, and a presentation board containing photographs of problem areas. Also included were individual issue cards and a blank matrix worksheet for ranking issues by priority (high, moderate, low, none) and the potential impact, if any, on one of three educational outcomes (student performance, social development, teacher performance). The workshop, with a working group of four teachers and the assistant principal, lasted a total of 90 minutes.

A second workshop was conducted on December 13, 1995 with the same working group to complete work began in the first workshop. During this workshop, the group began to consider options for re-designing the layout of their open instructional areas. In addition, a teacher survey was administered to gather further information regarding teacher perceptions of environmental quality.

On February 13, 1996, a final workshop, a planning and design workshop, was conducted with the School Improvement Team in which design options for new open plan configurations generated between visits were discussed.

THE DILEMMA

Robert W. Coleman Elementary School could be described as a progressive-minded school facing difficult but not insurmountable obstacles enroute to their bold vision of the future. Robert Coleman, under the leadership of its principal are in the process of implementing a vision of a community school that offers a one-stop shop interagency environment, one that reaches out to form partnerships with the community in order to more comprehensively serve the families within the community. The vision includes medical and dental care, religious services, family counciling, GED, and other programs. In essence, the school intends to become a complete community resource center.

As a first step Coleman, over the past year, implemented the Year-Round Education (YRE) Program, the first year-round school in the State of Maryland. YRE Program alternates on a 45/15 day cycle (effectively extending the school year by twenty days) of intersessions with the goal of "enhancing instructional delivery" by "offering curriculum and family options that more closely fit the changing work patterns and lifestyles" of the commuity (Taken from Robert Coleman Elementary School Student-Parent Handbook, p.2). The School Improvement Team (SIT) recommended the implementation of this program based on research evidence that year-round schooling improves attendance, decreases discipline problems, reduces vandalism costs and reduces the likelihood of teacher burn-out. As part of the YRE Program, the Intersession School Program augments traditional classroom instruction by offering additional remediation and enrichment course instruction during intercession in all academic subjects based on a format of cooperative learning, peer tutoring and multi-age grouping. Nearly two hundred students are served during the five ten-day intersession periods held throughout the academic year.

Other activities and programs currently offered as a support an extension of traditional instruction include the contracting of Sylvan Learning Centers which works with at-risk students, a Parent Academy that provides parenting and nutrition workshops, and a YMCA day-care program.

Obstacles to this vision are many, but are being addressed by staff. During interviews and workshops conducted for this study, the vision was found to be at odds with the realities of the physical facilities within which the programs are contained. The inefficiencies prevalent in these facilities has been born in part from a kind of "program-creep" created from interagency partnerships. The location of the Sylvan Learning Center is a self-contained classroom in the center of the second floor open space, and the assignment of self-contained classrooms to the YMCA and the Parent Academy serve as examples of this program creep in which prime instructional space has been allocated to accommodate the community school effort without any thought given to the implications imposed upon the instructional program. As a result, what is left is accreted and unworkable open plan instructional spaces that do not meet the instructional needs of

students or teachers. Identifying specific problems and formulating strategies to successfully accomplish the vision within the realms of the existing building structure has become a major focus of this study.
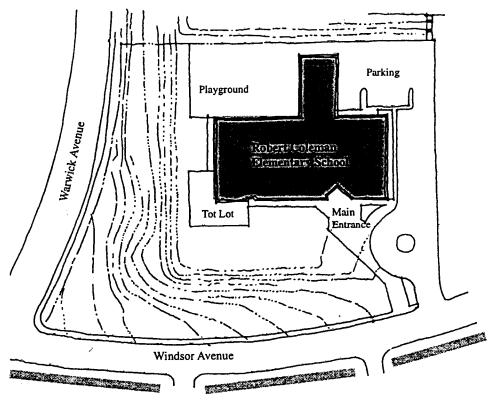
Unfortunately, Coleman currently finds itself struggling to implement their vision, while simultaneously trying to increase already low achievement scores. As of February of 1996, the school, along with 34 other low performing schools, has been threatened by Reconstitition (the take over and restructuring of the school by the State of Maryland). This study serves to support the efforts of Robert Coleman to formulate an Action Plan that includes the critical role of physical facilities in supporting the educational goals of the school. There is a strong perception among teachers, administrators and staff at Robert Coleman that environmental quality has an impact on the ability of students to learn and teachers to teach.

The environmental quality concerns of Robert Coleman come under the perview of Goal 2 of their 3-Year Strategic Plan which states: "To create and implement a design for optimal student learning in a safe, well-organized environment by providing greater flexibility and opportunities for innovative approaches and technological advances in the curriculum to meet individual students' needs." These same teachers and administrators firmly believe that addressing the environmental quality concerns of Robert Coleman will go along way to improving student performance, Goal 1 of the five goals of the school.

The Neighborhood

Robert W. Coleman Elementary School is located in the Greater Mondawmin Neighborhood a large African American community of long-term homeowners and one of the neighborhoods designated as an Empowerment Zone. Baltimore is only one of four cities to receive the designation as an Empowerment Zone by the federal government which entitles each of these select communities to $100 million in federal grants. Baltimore has identified 112 initiatives intended to transform their neighborhoods. The Enterprise Schools Program, for instance, includes Robert Coleman as one of 34 public elementary, middle and high schools designated by the program to be self-governing in the management of their financial resources, personnel, curriculum, educational policy and facilities. A School Improvement Team (SIT) has been formed in each of these schools to provide policy and management oversight, program assessment and mobilization of the community's participation.
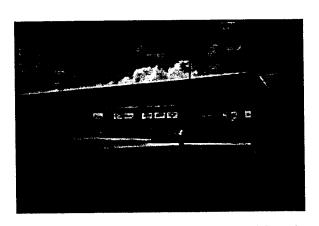
The site on which Coleman sits is bounded by Coppin State College campus located only a few blocks southeast of the school, Mondawmin Shopping Mall to the North, Route 1 a few blocks east (Monroe one-way south and Fulton one-way north) and North Avenue a few blocks south. Coleman shares a smaller southern section of a larger site that includes Douglas High School and its football field and looks across Windsor Avenue to well-landscaped single-family red brick row houses built in the 1930s.

Site Plan

To the west, is a steep grade drop-off and a view of more recent blocks of apartment housing on Warwick Avenue. Coleman is set back from Windsor Avenue 160 feet and allows for a circular drop off access providing a level of safety from the street, a feature non-existent in many central city schools. The parking wraps around the east side of the building and continues to the north along the gymnasium. A less-utilized paved area continues along the entire north end of the building.

The school itself was named after Robert Coleman, a successful black businessman from the neighborhood who overcame his physical handicap of blindness. The brown brick, two story steel frame and masonry school building was built in 1979 and originally designed as a school for the physically handicapped. An example of some of the physical elements that reflect the school's inital designation include a centralized one-way mirrored glass room in the center of the first floor instructional pod area origi-

The main entrance of Robert Coleman as viewed from the entrance drive.

nally intended for educational researchers to conduct unobtrusive observations is now the home of the school's computer lab. To date, due to rapidly changing demographics the school has never operated as originally intended. Today the school serves only one physically challenged student who is wheelchair bound (an elevator does allow this student access to instructional space on the second floor). The school does however, with the help of a federal grant for early education, serve 107 children with a variety of learning disabilities; thus the spirit of Robert Coleman still lives in this school.

A DAY AT THE SCHOOL

Arriving at the school site one can immediately sense pride and excitement: bright colored banners, draped over the entrance shout "Believe!, Achieve! Succeed!", "HOSTS: Help One Student to Succeed", "Fight-Free School" and "Sylvan Education Center." The barrage of banners and the bright yellow entry doors are welcoming and anticipate and reflect the frienzed, yet exciting activity contained within.

The main door buzzer rings almost continuously between 8:00 and 8:20 AM as older children and parents accompanying their younger children stream into the school's entrance lobby. The main lobby is clearly too small to accommodate the large influx of people, although it is clear this place is teaming with energy and excitement. The lobby contains historical anecdotes of famous African Americans, proverbs and plaques bearing information pertainent to the founding of Robert W. Coleman Elementary School and posters reinforcing positive attributes such as love, determination, perseverance and honesty.

View of Commons from Lobby

Before school even begins students eagerly consume their breakfast providing many of these children their only nutritious food of the day (some 80% of students at this school qualify for Title 1, a federally-funded program). Some children clean up afterwards, others do not. When students start to move to their classes, parent volunteers and kitchen employees begin the task of cleaning up the Commons, then preparing it for lunch.

An active Commons serving as the morning cafeteria

A ten-year old boy serves as an internal corridor "crossing guard" to ensure safe passage as students rush from the Commons to their respective classrooms. The young boy, complete with safety-orange stripes and plastic badge exclaims, "I make sure kids don't run."

The hallway is wide enough for most daily traffic, but the sitting area located against the south wall of the corridor, along with groups of conversing staff and teachers causes a bottleneck in the entry corridor creating confusion for people coming and going through the entrance doors.

It is during this period and at dismissal at the end of the school day that the school experiences its greatest threat from intruders: wallets, purses, microwaves and even tens of thousands of dollars worth of computers

Hallway leading from Lobby

have been taken from the school in the recent past. The policy of the school is that everyone who enters the building must come into the office and obtain a pass. Unfortunately, this policy is not enforced for the reason that it is difficult to see people coming into the school and difficult to stop them from wandering down the corridor leading to the instructional areas. The location of administration off to the side of the main lobby does not lend itself easily to controlling access to the school.

Related to the problem of uncontrolled access to the school is the problem of parents wandering the corridors looking for their children's classroom. The working group agreed that providing more visable signage to each academy and classroom would resolve the problem of parents wandering in and out of classrooms, causing alarm to teachers who interprete wandering parents as possible intruders. What makes the management of the intruder problem most difficult is that the school is often open all day long with after school programs until late at night.

As a partial measure in controlling access, Ervin, the head custodian, or "team leader" his official title at the school, serves as a watch during the morning and at dismissal stationing himself at the end of the corridor from the main entry to be on the watch for strangers. He sits in a chair at the end of the corridor and socializes with other teachers and support staff as he simultaneously greets entering students and teachers.
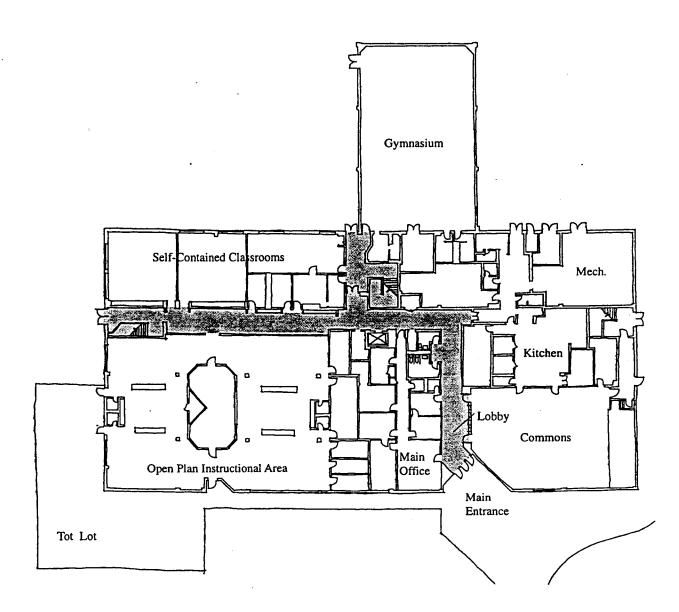
Ervin takes seriously the well being of his 'customers' — he is an employee of Johnson Controls, a private facility management outsourcing company. He sees himself as a role model and mentor for the students. Ervin's official responsibilities are blurred by his involvement with the students: "I look out for them...I like to tell them my story whenever I can." In a way, "Mr. Ervin," as the students call him, serves as a makeshift authority figure for students.

The custodial and maintenance staff has taken a number of steps to decrease the likelihood of unwanted intruders, as well as building and car break-ins and graffitti. Three security cameras installed on the outside of the building by the Johnson Controls maintenance staff in the past year have not stopped the frequency of car break-ins either — "they know no one is watching those cameras." Safety in the parking lot from assault, auto vandalism as well as safety from intruders continues to be a high priority for this school. The head custodian makes rounds around the building at regular intervals throughout the day to make sure exit doors are indeed locked from the outside. Graffitti problems have been resolved by relentlessly attacking the problem through the use of a pressure chemical wash on the back of the building where most of the graffitti appeared. "Its been a year since I've had to use the wash," the custodian says.
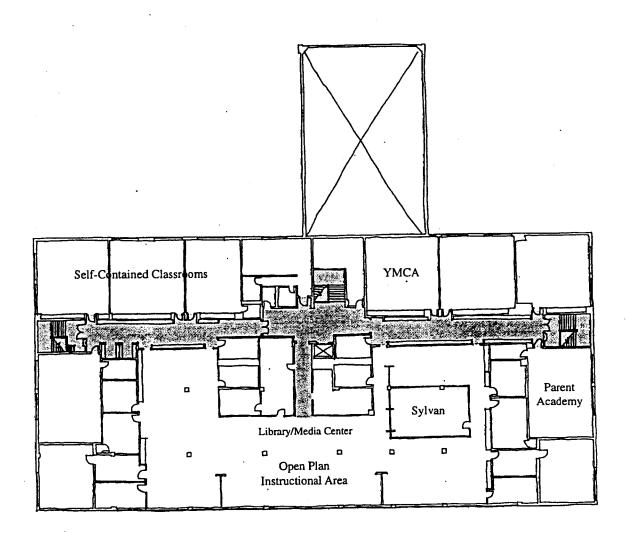
To Team Leader Ervin, environmental quality means safety and cleanliness. The school has had no safety accidents in the school since he has been there. He states, refering to his employer, "they train you to death, safety is central." In addition to his concern for safety within the school, Ervin cleans the grounds every morning and intermittently throughout the day, "its the first thing vistors look at" he says. There was glass everywhere, but now that is under control. The only problem he has now is "kids throwing trash on the grounds," but he is patient with them stating that "sometimes they have no place to put trash so they put it on the ground." Instead, he tries to instill a sense of responsibility in the students to take pride in their school.

The bottleneck problem at the school's entrance lobby is only a first indicator of the crowding this school is experiencing. Currently, 516 students, from kindergarten through fifth grade, 32 teachers and 28 staff members occupy a building originally intended to accommodate 180 physically challenged children. Class sizes range from 10 to 15 for special education classes, 20 to 38 students for kindergarten classes, and between 32 to as many as 47 for classes in grades one through five.

Currently, there are no standards for the size of academic learning areas which vary from state to state. However, there is nationally, one organization that has begun to rethink the sizes of educational spaces. In their Guide for School Facility Appraisal, the Council for Educational Facility Planners International (CEFPI) state, "New forms of instruction require greater amounts of space than in the past. Special education, remedial classes, cooperative learning, and community participation all create spatial requirements that differ from earlier periods of education." CEFPI recommends the following: The "building capacity" of an elementary school (the number of students capable of occupying a school facility) can be measured by taking the total gross square feet of the facility and dividing by 90 GSF/student (90 GSF being a CEFPI recommended number). The recommended gross square footage per student for kindergarten and pre-kindergarten classes are: minimal 30-35 GSF/student, acceptable 36-40 GSF/student, ideal 40-48 GSF/student. The recommended gross square footage per student for elementary classes: minimal 23-27 GSF/student, acceptable 28-30 GSF/student, ideal 31-36 GSF/student.

Gymnasium

Self-Contained Classrooms

Mech.

Kitchen

Lobby

Commons

Main
Office

Main
Entrance

Open Plan Instructional Area

Tot Lot

First Floor Plan

Self-Contained Classrooms

YMCA

Parent
Academy

Sylvan

Library/Media Center

Open Plan
Instructional Area

Second Floor Plan

Taking these standards as a means of assessing the conditions at Robert Coleman, the school building is above its capacity of 446 students at 582 students (at the time of the assessment). Pre-kindergarten and Kindergarten classrooms are below minimal standards at 26 gross square feet per student. In addition, the First through Fifth Grade classrooms are below minimal standards at 19 gross square feet per student.

Overcrowding at Robert Coleman may be experienced from the lack of effective auxiliary space, caused in part, by the influx of interagency programs and also by the inefficient use of remaining open space. The adminstrative area has become tight due to the addition of special functions, and the management of traffic within open space instructional areas are uncontrolled and crowded. There are few opportunities for the entire school to assemble in one space. The only two assembly spaces available are the gym and the commons room and neither is large enough to handle the entire school body.

During mid-morning in the Commons a teacher works quietly with nine students at a circular table on the Commons stage. No other people are present, accept the kitchen staff that walk in and our of the room quietly enough not to disturb the small group working silently on the stage.

Teachers have been creative in adaptatively using the available space within the school for a variety of latent functions. The Commons, which optimizes the "multi-purpose room," acts as a cafeteria, a teachers meeting room, an auditorium and at times an instructional space.

The Commons stage becomes a small group instruction space to escape the distractions of open space.

The Gymnasium also serves multiple functions in addition to the expected physical education activities. The "Coleman Cafe," for instance, is a special lunch place for students; an opportunity to eat in the cafe is considered a privilege and a reward.

Circular tables in the Coleman Cafe are complete with skirts and celebratory decorations. Signs identifying "Coleman Cafe" are on the walls surrounding and marking the area of the cafe.

The Coleman Cafe - a special lunchroom - uses available space in the gymnasium.

In addition, the gym, like the Commons, acts as a place for small group instruction. Although the fluorescent lighting in the gym flickers and is inconsistent and uneven, teachers still seek out these spaces for opportunities for private instruction. Often, even with the gym being used as a setting for physical education, tables from the Coleman Cafe and from previous small group instruction continue to occupy space in the corners of the gym.

Lockers further illustrate the tightness of space and its potential affects on students: two, three, sometimes four students share a single locker, causing feelings of crowding and lack of privacy. Students have lost coats, books, bags, tennis shoes and other personal items while sharing lockers with others. In a positive sense they learn how to get along with others and share, but often at the expense of privacy and not having a place of one's own within the school. According to teachers, what makes the students' lack of privacy in school most unfair is that these same students continue to experience a lack of privacy in their own homes where they often have no place to be alone being crowded with their family into small apartments.

Organizationally, the school operates as three schools, or "campuses" in one engendering a social climate of belonging. The Primary Coleman Campus includes Pre-K to First Grade and is located on the first floor in the main instructional area. The Coleman Center includes Grades Two and Three and is located on the east end of the second floor, while the Marshall/Mitchell Academy includes Grades Four and Five on the west end of the second floor. Students spend most of their day with others of similar gender from their academy — boys and girls are separated by class with the belief that this strategy reduces distractions caused by social relations between genders.

The physical building layout that houses this school-within-a school organization, provides both open space instructional areas (approximately 5,400 GSF of actual floor space) and self-contained classrooms (8,900 GSF) on both floors. Taking into consideration all instructional space (primary, support and supplemental), the total amount of effective square footage of the building is approximately 19,700. On the first floor, three self-contained classes are provided opposite a pod design providing space for four basic instructional areas with a central enclosed space originally intended for observation while providing auxillary spaces off the open pod for therapists, storage and small group instruction. Two banks of cubbies located between the instructional areas affectively divide the open space in half, as well as providing a small commonly-shared space used by both teachers. On the second floor, eight self-contained rooms are opposite a larger open plan instructional area which also contain auxillary spaces for various specialized functions. The entire school, including instructional space, assembly space (4,700 GSF) and facility support space (16,800 GSF) totals approximately 41,200 gross square feet.

In an effort to find support for improving the conditions of learning for students of Robert Coleman, the principal partnered with Education Alternatives, Inc., a private management firm, to help with financial budget concerns. As part of this partnership

they obtained the custodial and maintenance services of Johnson Controls. Coleman has been consistantly satisfied with the responsiveness of the custodial staff compared to the previous custodial services provided by Baltimore City. On hearing that they may lose Johnson Controls in the Spring of 1996, one staff member stated "I hope we can keep them." It is more likely, one teacher suggests, that the Johnson Controls custodians will become employees of Baltimore City in March when EAI's contract expires.

"When you don't have the comfort you need to maintain a healthy body you don't care about socializing, you don't care about history lessons and the revolutionary war, your worried about survival...thats one of the basic needs, the hierarchy of needs."
[Third Grade Teacher]

Even with the private company, particular environmental quality concerns still continue to surface. Good custodial responsiveness and general maintenance can go only so far. At some point, building systems that operate inefficiently must be addressed as well. The condition of the aging mechanical system along with the lack of adequate bathroom ventilation have continued to concern teachers: "We have a much better regulated system now, but it still gets cold in here," one teacher remark summarizing the general feeling on the second floor. Another teacher is more blatant, declaring, "I live in Alaska most of the time!" Some rooms are colder than others. Rooms at the west end of the second floor in the second and third graders' Coleman Center seem to be the most disadvantaged. Cutting down air in the one pod only has the effect of eliminating air in another. "Now that it's winter, " the same teacher exclaims, "We're on a tropical island!"

Action Request records of Johnson Controls indicate that the company routinely conducts preventative maintenance inspections on the mechanical systems as well as responding to specific requests. The maintenance crew has over the past year repeatedly responded to calls complaining of the lack of heat by restoring bleed return lines, replacing and repairing univent heating coils, responding to boiler misfires, cleaning boilers found to be smoking, replacing defective motors on heat pumps.

Despite the responsive work of the maintenance staff, problems with heating and cooling remain a top priority of teachers. They strongly agreed that environmental quality of thermal comfort and health is a primary need that affects student performance, social development as well as their own teaching performance.

Ventilation is another problem highlighted by the working group. Again, it was felt that the custodial staff are very responsive and accommodating, but all the cleaning in the world isn't going to solve the problem of bad smelling bathrooms that are used all day long. One teacher who brings in her own deodorizer to eliminate odors reaching her instructional area commented, "Sometimes you need a surgical mask to enter the bathroom." The problem of ventilation is suspected to be due to old and inoperable fans that

vent air back into classrooms instead of outside . The maintenance staff has on several occasions checked roof exhaust fans, motors, power and switches, however the problem seems to remain. The custodial team leader echoes the concerns of teachers, "cleanliness is the most important thing," he says. "At first, bathrooms smelled so bad, it was so distracting...there was trash in the hall due to no trash cans...it took six months for me to be in total control of what I wanted to do here."

An overlapping concern for outdoor ventilation for teachers are the condition of the exterior windows in the facility. Like many windows in the schools around Baltimore City the windows are constructed of a shatter proof semi-transparent plexiglas originally specified presumably to cut down on the cost of replacing broken glass and to make it more difficult for intruders to enter the building. Most windows in Robert Coleman are either locked or fixed to further eliminate the possibility of breaking and entering as well as to provide some control over the intake of outside air for the mechanical system in both the heating and cooling season. Unlike some schools in Baltimore City, Robert Coleman does not have bars on the ground floor windows. The result of this choice of fenestration system is that windows which cannot be openned are unable to provide the needed ventilation to temper the fluxuations in the indoor environment, natural daylight, views out and just fresh air. A science teacher laments at the inability to conduct science projects due to the lack of ventilation that could be provided if he could open some windows to the outside. Another teacher complains about the lack of connection to the outdoors, "We can't see the park just outside our windows!"

Another priority for the working group is playground safety, as one teacher stated "Playground safety is No.1." The only playground equipment is a monkey bar located on the west side of the building. "There is no facility for younger children to do gross motor activities and the playground that is out there...well, if anyone took a tumble from those monkey bars they could smash their head open." Although no major accidental falls have ever occurred on the playground, the possibility of accidents concerns teachers. One teacher described a recent incident that frightened her: "I was scared to death when I saw about fifteen kids run down the hill towards Douglas. About four of them could not stop and this car almost hit all four of them at the same time, I just stopped and grabbed my chest." What complicates the lack of playground safety are the fears of teachers that the school is located in an unsafe neighorhood environment. One teacher will not take students up onto the high school's football and track field for fear of her students' safety.

The playground is unsafe and lacks developmentally appropriate play equipment.

One idea that surfaced during the workshop discussions was the idea of involving students in landscaping projects such as planting a tree. The thought was that this kind of project might help "children take pride in what's here instead of destroying the landscape that is here." One teacher described a previous experiment with a garden she had her students grow: "We had a garden out front and the children would grow vegatables in the classroom and take them out and plant them in the garden. Homeless people were invited to take vegetables from the garden." Although the group felt that pursuing this activity could contribute to both student learning and social development, it was decided that the project was of moderate priority at this time.

"The person that designed this school should be shot, or at least be forced to teach in Mr. James' classroom for awhile!" [Working Group Member]

Probably the most complex problem that teachers are concerned with is the distraction caused by open instructional space. In addition to the typical problems of open space areas (visual and auditory distractions for teachers and students) these areas are inefficiently layed out and organized, obstructed by structural columns and do not provide nearly enough wall space, or enough floor area for activity centers. There seems to be no correspondence between the size, shape and configuration of the makeshift classrooms and the educational activities that are contained within them.

Mr. James' classroom space caught between a corridor on the left leading to other open space instructional areas and a passageway on the right leading to the boy's bathroom.

The open space on the second floor, the space shared by Coleman Center and the Marshall/Mitchell Academy has become a cluttered, incoherent and unorganized mix of classes surrounded by partitions resembling war bunkers. There are make-shift dividers employed to identify the boundaries of the classroom: high desks, tall charts, bookshelves left from the library/media center, modular plastic shelving and remnants from a 1950s office partitioning system.

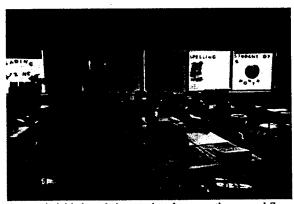The second floor open instructional area leading to the library/media center

The battle to keep out noise and distractions from other classes moving past these fortresses is never ending. Several teachers feel their students are constantly distracted by other classes that pass by enroute to adjacent rooms. The location of the bathrooms within the open space is also a particular problem for those classes located adjacent to them. The conditions in these open instructional spaces teachers have lived with for years without knowing how to address, let alone resolve the problem.

In one particular fourth grade instructional area off the main corridor in the Marshall/ Mitchell Academy, is a corridor on the east side of the area that leads to several other open classroom areas, and on the west side is a door that leads to a boys bathroom. Students must literally walk through and disrupt the fourth grade class every time they need to use the bathroom. This makeshift passageway to the bathroom creates a constant zone of movement that continually distracts the class assembled in the adjacent space. This same instructional area contains a structural column that obstructs the view of the teacher, Mr. James, wherever he is in the room.

It just so happens that the working group is holding its workshop in Mr. James' room. This is not the only instructional area that is experiencing problems; it just happens to be the worst example in the school. The outcome of the poor planning of these instructional areas is decreased adaptability of the classroom area — those areas have become, in effect, wasted space for teachers.

One teacher observed that her school was "Not using open space as it was intended: for team teaching, sharing with other classes, group work and planning together." As one administrator commented, "The only problem in this situation, is that people are not trained to work collectively, its very hard, its a whole philosophy that you have to integrate into the school; you have to talk about looping, about dealing with non-graded situations." For instance, she suggests the possibility of an indoor play area for kindergarten and first graders on the first floor in the Primary Coleman Campus : "You would have the space if you restructured the room...but, that takes alot of commitment and time and administration...equipment, materials and such and it only works when we don't have...this hodge podge. You can't use a space created for something else."

A crowded third grade instructional area on the second floor with computers facing the exterior wall. Window blinds are shut to reduce glare at the terminals. One student tapes cardboard to the top of the computer to further decrease glare.

All teachers in the working group agreed that the plethora of problems experienced by teachers in open space instructional areas has a direct affect on student performance, social development and their own teaching performance. The sentiments of the group

were best summed up by the administrator, "These teachers are working against the facility so much that it takes energy out of them for teaching." Finding a way to address this environmental quality problem of classroom adaptability is one of the highest priorities of the group.

One casualty of this territorial battle for open space is the desolate library/media center. The school lost their librarian due to budget cuts, yet books, now over 30 years old, litter the book shelves with no sense of order. One parent observed,"We just use what we have. We haven't had a library in four years."

Three computers are located within some remaining caroles but do not operate due to a shortage of available staff to maintain them. Books lie strewn across various bookshelves now used as partition barriers by instructional areas on both sides of the media center. The media center's tables are used by adjoining classes and small groups of students throughout the day.

The abandoned library/media center occupies a space large enough for an additional instructional area. This area has operated as a kind of second floor commons space for students.

The philosophy and long-term vision of the prinicipal with regard to libraries in general is that they belong in classrooms along with CD-Rom computers so that students have immediate access to information. However, until this is achieved, the media center — it is still called ironically "the media center" by the occupants — acts as a kind of central meeting place for students on the second floor and alleviates some of the problems with crowding on the second floor: students from one particular class will spread out, or spill over into the media center when it is not in use by any other group. Discussions as to how to most effectively utilize this area have been a major topic of concern during both the interviews and workshops.

The problem of unorganized storage illustrates and mirrors the problems with teachers not taking ownership of shared space. Although it has been an issue all teachers have been aware of, nothing was done until just recently. As one teacher stated "We have adequate storage. It just isn't organized as well as it could be." The possible impact this problem might be having on teacher performance was reflected by this comment made by the master teacher, "I can't do an inventory. I can't find 90% of the stuff. Whats in here?...Old furniture thrown in, manipulatives, books that have never been used, charts...got some excellent things that have never been used!"

Since shared storage is so difficult to use, many teachers store their materials and books in their instructional area. This creates another problem. As several teachers claimed, "I had fifty books missing after intercession...I had library books taken off my desk during intercession that I had to buy." After reflecting on the unorganized storage problem, the working group felt that addressing this concern was a high priority that could be addressed immediately.

A teacher's chaotic and disorganized work area within one of the existing open instructional areas on the second floor

The overall attitude of the group concerning the complex problems of managing open instructional space were summarized by this teacher's comment, "We have become so accustomed to these things that they don't seem as important anymore." The workshop had given the small group of teachers a chance to reflect more thoughtfully their environmental quality concerns as well as providing an opportunity to carefully consider ways of addressing these concerns.

FINDINGS & DISCUSSION

The previous section describes in some detail the more critical of the twenty-seven (27) distinct environmental quality issues of concern at Robert Coleman identified by the working group (See Appendix A for a complete listing and summary of these issues).

Some of these issues overlap and in some cases, contradict each other. For instance, the desire for natural daylighting, fresh air and outdoor views were often overruled by more critical needs for security from potential intruders, which dictated the locking of first floor windows and shutting the blinds. To further understand the implications of these issues on the educational process, through the assistance of the working group, issues were categorized by (a) ten attributes of environmental quality, and (b) their potential influence on three broadly defined educational process outcomes; student performance, student social development and teacher instructional performance.

Ten distinguishable attributes of environmental quality have emerged from the intersection of the researchers' findings in Baltimore City Public Schools and what is known from previous research literature. Not only was there a desire to understand the nature of the interaction between the various attributes of environmental quality, but the appraisal of teacher perceptions of the potential influence on the educational process was

desired as well. What follows is an analysis of the relationship between these attributes of environmental quality, the issues raised in the working group and their percieved potential impact on the three educational process outcomes.

1. Physical Comfort and Health *refers to the degree to which occupants feel the indoor environment meets your physiological needs with respect to thermal and air quality, illumination, noise and odors.*

- After problems with classroom adaptability, physical comfort and health was percieved as having a potentially large impact on student performance, social development and teacher performance. The school is on occasion too cold (#3), has perceived poor air quality (#4), lacks ventilation for science projects (#12), and has no views of fresh air from windows (#21). According to teachers these environmental issues combine to limit, at times, the performance of both teacher and student.

- The lack of bathroom ventilation (#7) while admitted as having little to do with educational outcomes does contribute to unpleasant odors,

- while the plumbing and drainage system has on occasion failed to prevent flooding on the first floor (#25) creating a potential for health risks.

2. Classroom Adaptability *refers to the degree to which occupants feel that the physical classroom space can be adapted to different and desired educational activities and functions.*

- Not surprisingly classroom adaptability was distinguished by the working group as the most directly influencial quality potentially effecting the educational process. Issues such as overcrowded classrooms (#2), the underutilized library/media center (#6), problems with computers (#8), concerns over open space versus self-contained (#13), and unused space between the first floor instructional pod areas (#17) were all seen as potentially hindering student performance as well as student social development and teacher performance.

- Overlaps between classroom adaptability and other environmental quality attributes such as privacy, crowding, personalization and ownership add to the perceived impact of classroom adaptability on the quality of the educational process.

3. Safety & Security *refers to the degree to which occupants feel the school building contributes to protecting occupants from harm, injury, or undue risk.*

- By far the most important influence of safety and security on the educational process is in the area of teacher performance. Four issues contributed to this

finding, parking lot safety (#11), ventilation for science projects (#12), safety from intruders (#14), and no views out of windows (#21). Teachers experience an ever-present undercurrent of anxiety concerning the unsafe school grounds. Locked and frosted windows constantly remind teachers of the surroudings. Stories of past intruders remind teachers of the lack of control they have at times even within the building. Although teachers feel psychologically safe within the building and often claim to be habituated to the situation, an ever present concern for their safety and the safety of their students pervades their day and is every so often heightened by new events that may impact directly on them. These feelings, they argue, indirectly affect their performance by distracting them from their immediate task of teaching.

• Concerns for ventilation safety (#21) have kept one teacher from conducting science projects in his instructional area affecting not only his own performance, but also hindering potential curricular choices thay could impact student performance.

• Safety on the playground (#1) is interpreted by the working group to hinder possibilities for student social development, in that with deteriorating conditions of play equipment and grounds do not as easily support teachers' attempts at organizing constructive play, as well as being more reluctant to have students play on the grounds.

4. Building Functionality *refers to the degree to which occupants feel the various places within the school building are functionally compatible with your school's educational programs and activities.*

• The centralizing issue reflected in Robert Coleman is the lack of correspondence perceived between the building as it was intended to function, as a school for the physically disabled, and the way in which it actually functions now, as an emerging community school (#16). Currently, these mismatches are perceived by teachers to be affecting student performance and social development, as well as their own performance.

• The underutilized library/media center (#6) limits effective space for instruction, while the inadequate lobby design (#5), and lack of space for school-wide assemblies (#27) limit opportunities for quality social interchange between students, teachers and the community. In addition, teachers feel their performance suffers when they must cope with an abandoned library/media center (#6), unorganized centralized storage rooms (#10), a crowded adminstration area (#18), and directing lost parents who cannot find their student's classroom (#9). Combined, these issues form one of the most critical environmental qualities negatively affecting the educational process.

• The administrative staff at Robert Coleman being fully aware of the impact of building functionality on their educational delivery is proactively addressing the problem through the re-design and reassignment of instructional space.

5. Aesthetics & Appearance *refers to the degree to which occupants feel the school building is attractive and provoking.*

• The appearance of Robert Coleman's school building was perceived as influencing occupant and vistors' first impressions of the school. A clean school equals an orderly school. Clean and shiny floors, flourescent light strips brightly shine without flickering, displays are orderly and colorful, these are the symbols of a school that is on a progressive track toward excellence. The quality of aesthetics and appearance is perceived as potentially supporting social development and cultural awareness and pride in students as well as visitors to the school. Maintaining a positive appearance to the building reinforces personalization and ownership in not only its occupants, but in the community as well.

• For Robert Coleman, this vision comes up short when the working group mentions the unsafe playground (#1), in inadequate lobby design (#5), lack of views out frosted and dull windows (#21), and student work displays (#23).

• One area that is holds promise is the landscaping projects (#19) discussed by the teacher group.

6. Personalization and Ownership *refers to the degree to which occupants feel the school building offers opportunities to create a personal and self-expressive environment and engender a sense of ownership.*

• Student social development was seen as the educational process outcome most potentially influenced by the attribute of personalization and ownership. Overcrowded classrooms (#2) are seen as not providing enough opportunities for personalization.

• Landscaping projects (#19) are perceived as potentially encouraging increased ownership in the school grounds.

• Signs of academic unity (#22) are read as strengthing a sense of ownership in students toward their academy,

• while student work displays (#23) are believed to instill some pride and ownership of students encouraging their social development.
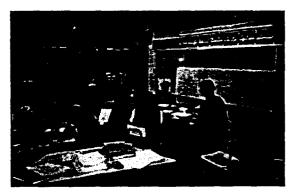
7. Social Places (Places for Social Interaction) *refers to the degree to which occupants feel that places within the school building provide opportunities for meaningful social exchange and interaction.*

- The quality of social places was one of the perceived qualities that garnered the least attention. One possible reason for this is that the entire school promotes continuous social interaction which gives Robert Coleman its feeling of vitality and excitement, but also limits opportunities for respite.

- Some social places recognized by teachers within the school that were linked to environmental quality issues included the underutilized library/media center (#6) which has become an informal place for students from various classes to gather and socialize as well as an informal small group instructional area.

- The entrance lobby (#5) was identified as social place in need to improvement with respect to lighting and layout of seating arrangements.

- Shared lockers (#20) are seen as a place encouraging social development even as sharing produced feelings of lack of privacy, personalization and ownership on the part of students.

- The non-use of the teacher lounge (#26) as a social place was not seen as a problem for teachers given that they informally interact with each other in other places in the school such as corridors, adminstrative offices and in numerous staff meetings.

8. Privacy *refers to the degree to which occupants feel that there are places within the school building which provide opportunities for an individual or a small group to be free from the intrusion of others.*

- Experiencing the quality of privacy in Robert Coleman is a rarity. Due to overcrowded classrooms (#2) were no one has privacy, and open space classrooms (#13), both student performance and teacher performance are believed by teachers to be suffering. Distractions from within the crowded classroom as well as distractions from outside the instructional area severely limit time on task according to teachers.

- Added to the lack of privacy during instruction, students must continue to experience the lack of privacy while securing items from their lockers often shared with one or two additional students.

- The teachers' lounge (#26), although a possible haven for teachers is not used due to the lack of time to get away from continuous daily activities.

9. Sensory Stimulation *refers to the degree to which occupants feel the school building provides a stimulating environment for learning that is safe yet challenging.*

• Most of the schools in the study tended to rate themselves high with regard to providing a stimulating environment for students. Robert Coleman admitted to being at the same time overstimulated in areas and understimulated in others. The quality of sensory stimulation was understood by teachers to potentially influence social development over student performance.

• Limited use of the unsafe playground (#1) was seen as limiting potentials for social development,

• while landscaping projects (#19) it was argued provided opportunities for social development of students.

• Student work displays (#23) were perceived by some to be positively stimulating to students, however others felt that displays were less effective in carrying a message due to their chaotic organization and lack of theme across the school.

• Teachers pointed to the lack of views out windows (#21) as evidence of a lack of sensory stimulation that has the potential of hindering their performance.

10. Crowding/Spaciousness *refers to the degree to which occupants feel the school building cannot adequately accommodate the number of students and teaching staff occupying it.*

• The attibute of crowding is most evident in overcrowded classrooms (#2) where teachers feel student performance, social development and teacher performance suffer. Being in close quarters, students often feel their personal space is violated resulting in fights and distruptions that interfere with instructional learning.

• The crowded administrative area (#18) gives the impression that the school is at the same time lively and active as well as unorganized and chaotic.

THE SOLUTIONS

By the end of the second workshop involving the four teachers and the assistant principal, the group was ready to act. Discussing the problems with the open space layout consumed much of the group's discussion. The assistant principal declared, "I think its a priority that should be looked at, and one of the things this group can start thinking about for starting to plan for next year in September is 'can we use this space differently?'" She stated that this assessment process has given them impetus to question what they could do to improve their educational environment: "By doing this, we have been able to look at some stuff and say, hey, we have a bad thing, but how can we make it better? How can we use it more effectively?... and thats going to help us."

Discussing environmental concerns during one of the assessment workshops

The desire for further structural changes on both the first and second floor open instructional areas is a high priority environmental quality concern that overrides many of the previous concerns mentioned. Teachers in both instructional areas were open to any suggestions that might emerge from the working group. Many of the problems of the second floor open space instructional area are echoed on the first floor. The main focus of discussion centered around the location of the existing cubbies that divided up the open space in a formal way preventing additional space needed for desired learning activity centers.

In some ways, the principal was way ahead of our working group. She had already contacted a group of volunteers to begin the process of not only reorganizing storage space, but also dismantling the media center as a first step in reorganizing the physical space in the school with the intent of accommodating a health agency suite on the second floor. Once word about these decisions surfaced in the working group during the second workshop in December 1995, they quickly moved to formally present and influence these physical and organizational changes taking place to the principal and the School Improvement Team (SIT) committee.

Action is being taken by Robert Coleman to identify and address many of these and other aspects of environmental quality in their school (see the appendix for a complete listing of the final issues arrived at by the environmental quality assessment working group). As a result of a series of interviews and workshops between September 1995 and February 1996 discussions have begun between teachers, the SIT committtee and the principal concerning ways to rethink the entire school facility to more closely fit the

educational programs that currently exist, along with those school-community partner-ships that will soon be sharing space with these programs.

Robert Coleman has been working closely with the Woodburn Center, a school for children with severe emotional problems, as well as Lamell Middle and Douglas High Schools to develop a community school at Coleman. They were inspired by a visit to a "Beacon School" experiment in a child welfare school in New York (get literature on from Kate). The school has everything from a dentist, health clinic, school store, and other health services. Consequently, Robert Coleman has made the decision to start with the development of a health services center within the school although a health service provider has not been identified as yet. The goal is to find a provider and provide space within the school by the next school year.

As a result of the workshop and discussions with the principal, several options were identified for the inclusion of a new health suite within the school. However, before these options could be developed, several wider implications of bringing in another outside agency into the already crowded school facility needed to be addressed. The following is a brief outline of a set of assumptions and ideas generated through group discussion that were addressed prior to developing options.

There are many inefficiencies in the use of current space. Several storage areas on either side of the second floor open space are examples. Consolidating storage to a few central areas may have the effect of freeing up additional space for the health suite. Another that has been discussed at length is the "media center" area that has not been used as a media center for some time. Questions concerning the need for a separate library were discussed.

The consolidation of the YMCA and Parent Academy spaces was also raised as a possible option. Both are seen by many, but not all staff members, as having limited use. Before changes in the status of these spaces can even be considered, discussions must take place with both the YMCA and parents who operate the Parent Academy. The importance of the Parent Academy must be retained even if it is relocated. This space has become a kind of "thank-you" space to parents who spend subtantial time in the school — it is felt that they should have their own room for purposes of self-identity. Also, the Parent Academy is used as a "semi-daycare" room in addition to being a workspace for parent volunteers, and is also a parent workshop room.

The possibility of moving the Sylvan Learning Center back along the corridor wall to open up central open space was discussed. However, due to contractual relationships with the company and the cost associated with such a move many felt leaving the space in its current location was the best solution. It is agreed that Sylvan's awkward layout creates some problems with respect to available classroom space, but attempting to include them in re-design might be overly difficult.

The potential of consolidating two special education rooms into one self-contained room was discussed as well. The idea behind this move is that two existing special education classes that currently occupy open space that generate distraction could be moved to a self-contained room, such as a fifth grade room, where they could be provided more privacy. Then that class would be moved to the large open space reconfigured to accommodate them more effectively.

Time-sharing space use was another possibility to resolve the no-additional-space problem. Some rooms could be shared, but a strategy for cooperative use of shared space would have to be worked out with occupants of those spaces. If for example, the health suite is to be in operation during Intersessions only, it could share space with a classroom located near a bank of enclosed rooms on either the first or second floor.

Providing portable classrooms was another option discussed. This is often a standard approach to a school that is expanding — to slowly accrete additional space outside the existing school. Portable classrooms can be bought at a low price and provide additional classroom space, however, it could be argued that this option only creates more problems in that it is only a short-term solution to what is actually a long-term problem.

The Reading Lab and Consulting Teaching Rooms are two rooms that were also discussed as a possible central location for the health suite rooms, however, they are sizable rooms for instruction that would be difficult to give up.

There were some spaces that were seen as being off-limits to the facility re-thinking. These rooms included the faculty room which is a mandated space by law and the GATE program room on the second floor which requires a secure and locked room.

From these discussions three options emerged with a fourth being discussed at the SIT committee meeting.

Option A

This scheme first introduces the idea of having the Health Suite in the area now occupied by Mr. James. This area is divided up into two Health spaces, one a general area for waiting and possibly treatment or other administrative functions and another for a more formal office or treatment room. One other room (currently the storage room) is assigned as another office/treatment room for the Health Suite. This arrangement allows for easy access directly off the main corridor. This option also locates the YMCA in the center area of the open space for ease of access and visability. Ms. Baker can then move into the self-contained classroom for additional space and acoustic privacy and Ms. Baker's space can be subdivided into two smaller spaces for Ms. Jennings' and Ms. Kelly's special education classes. This scheme also isolates Ms. Norman's classroom from the open space with the potential of reducing noise.
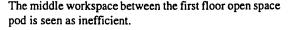
Option B

This option moves both the YMCA and the Parent Academy into an open space that can be shared in any way appropriate — no boundary is determined for them. Both functions are out in the open and widely accessible to all children as they should be. Ms. Norman is relocated to the Parent Academy room and Ms. Baker is relocated to the YMCA room. Relocating these two classes provides acoustically isolated self-contained rooms for classes that did not have that available to them before. The open space becomes a place for more varied programmed activities such as might occur with the YMCA and Parent Academy. There is some concern about noise, but with the classes surrounding the space now behind closed doors, this noise can be controlled. The open space is once again reconfigured to take advantage of the unused Media space and wide left over corridor. This option places a Health area, Mr. Benkus and Ms. Kelly (special education), as well as Mr.James into a five or six foot high partitioned open space. Ms. Gilbert (special ed) can then move into Ms. Baker's existing area with some slight modifications in partitioning to help with additional privacy screening. The Health Center is located in a different location and takes advantage of as many existing small rooms as possible. Those rooms are reassigned and the functions that were in those rooms are either consolidated (somehow, such as storage) or relocated (such as Mr. Benkus who moves to Mr.James' existing area). Ms. Jennings moves from the workroom area to Mr.James' existing classroom area to make room for a consolidated central storage area. This room could also be used once again as a central workroom for all teachers.

Option C

This option keeps the YMCA and Parent Academy in the same location. The prior two schemes present suggestions for relocating either one or both into the open space to open up some self-contained classrooms for classes that need some acoustic privacy. This scheme assumes that this might not be possible due to the political nature of those rooms. The open space is once again reconfigured to take advantage of the unused Media space and wide, left-over corridor. It places Mr. Benkus, Ms. Baker, and Ms. Gilbert (special education), as well as Mr.James into a five or six foot high partitioned open space. The Health Suite is similarly layed out as in Option A.

A fourth Option emerged during discussions with the SIT committee. Here the configuration would be the relocation of the Health Suite as well as the YMCA and the Parent Academy on the first floor, into the self-contained classroom rooms opposite the corridor from the first floor open space instructional area were discussed. The advantage of this approach is that the health suite could be located near an entrance on the first floor so that it could operate more independently from the school and not create additional public traffic on the second floor. The Parent Academy and the YMCA provide a day-care function that is complementary to the health suite. The second floor layouts discussed in the first three options could still be implemented without the additional inclusion of the health suite function.

The middle workspace between the first floor open space pod is seen as inefficient.

A crowded first grade class within the instructional open space pod on the first floor. Cubbies act as boundary between classes. Teachers in this pod complain there is no room for activity centers.

During the two previous workshops the issue arose of the inefficient open space instructional area on the first floor. This final workshop was an opportunity to address this issue in light of the location of the Health Suite on the first floor. Most of the discussion centered around distractions from other classes, and in one case, the over-crowding of students and desks that obstruct space for activity centers, and also the issue of the relative lack of use of the central cubby areas between classes. The function of this middle area between the instructional areas is ill-defined. Sometimes it is used as a makeshift office for teachers to review materials, other times during the day it acts as a small instructional area for teachers. Although it offers the possibility of more private space, it remains unused most of the day. The combined impact of these issues caused teachers to re-think the use of the space as well as the possibility of changing the educational program strategy for teaching Pre-K to 1st Grade.

Relocating the existing Pre-Kindergarten, Kindergarten and special education classes became the issue in this scenario. Ms. Fenster, the assistant principal suggested that the Pre-Kindergarten and the Kindergarten could be included in the existing open space instructional area across the corridor if the teachers could commit to an Inclusion Model with a non-graded structure. The vision of the activities of this non-graded inclusion model would be to develop a motor area, a climbing center, an exploration center, reading groups and other activity centers in which students would be rotating all day and where teachers would team teach. Presently, the layout of the instructional areas are "chopped up," inflexible and unworkable. To utilize the space better, Ms. Fenster suggested that movable partitions be brought in that could be moved around to accommodate different activities as needed. She arguedthat the notion of the "classroom" is foreign to this educational model and the open instructional space should continue to be used as it was originally intended — as a flexible and adaptable space for a wide variety of individual, small and large group instruction strategies.

At the Feburary 13, 1996 SIT committee meeting, the decision to follow a modified and phased Option A was reached. Storage rooms were to be re-organized, the second

floor open space instruction area was to
be reconfigured without assignment of
particular classes. The issue of where the
health suite would be located, either on
the first or second floor, and other reas-
signments of classes to newly created in-
structional areas on the second floor would
be tabled until the fourth option could be
explored.

On Monday, February 19, 1996,
President's Day, the volunteer group from
the Civic Works Project came into Robert

Debating environmental planning options at the
School Improvement Team Meeting

Coleman to begin the ground work for implementing the new facility plans. Later in the
month, another community volunteer group continued the process. Meanwhile, discus-
sions regarding the rethinking of the educational program and its physical structure on
the first floor continued.

It was at this same time period, late January, that the Baltimore City Public Schools
publicly announced, through a press release, that Robert W. Coleman Elementary School,
along with thirty-four other "low performing" schools was on a list of schools being
considered for "reconstitution" — a process through which each school would undergo
consultation with the State of Maryland to develop a restructuring plan to increase test
performance on the MSPAP Performance test. As part of the argument for *not* being
reconstituted, each school was to formulate an Action Plan, due May 15, for how they
intended to increase the performance test scores.

The assistant principal suggested that the issues the environmental quality working
group had addressed may have an affect on student performance, and the work at re-
structuring their school facility could become part of the larger Action Plan to further
illustrate steps the school has been and continues to take to improve the educational
environment.

APPENDIX A: ENVIRONMENTAL ISSUES

Issue No.	Issue Title	Issue Description

High Priority Issues

1.	Playground Unsafe	The play equipment is very unsafe although there has never been any major accident. There is no facility for younger children to do gross motor activity. The school is writing a federal grant to raise funds to construct a more appropriate playground.
2.	Overcrowded classrooms	Classrooms are overcrowded from 32 to as many as 47 students in a single class. As a result, there is no room to set up learning centers. More class time is devoted to behavior modification than learning.
3.	Too Cold!	Currently, the air conditioning system is much better regulated than in the past, however, some rooms are still much colder than others. Cutting down air in one pod area has the unintended effect of shutting air down in other parts of the building.
4.	Air Quality	Windows do not open by design and therefore teachers and students cannot get fresh air they want. The existing air quality in the enclosed space is not satisfactory to most teachers. The school administration is not sure about the quality of the air, it has never been tested.
5.	Inadequate Lobby Design	The lobby area, not being large enough to accommodate the traffic, becomes a bottleneck at several periods during the day. In addition, there is not enough lighting in the lobby due to incandescent light fixtures and dark unreflective surfaces.
6.	Underutilized Library/Media Center	The library/media center has come under disuse due to the lack of funding for a librarian position and books. The space on the second floor has become an informal instructional space, and is vacant most of the time. Computers are inoperative, books are outdated and in disarray. The school has considered plans to rearrange the instructional space on the second floor to take advantage of this space.
7.	Lack of Adequate Bathroom Ventilation	The custodians are very responsible in keeping the bathrooms satisfactorily clean, however odors in the bathroom are a constant problem due primarily to a lack of ventilation. This problem exists for all bathrooms in the building.
8.	Computer Problems	A third of the computers in the building do not function properly. No one staff member has been assigned the responsibility of maintaining them, nor does anyone have the knowledge to address computer related problems.
9.	Problems with Parents Finding Way	Parents tend to get confused when they come up the stairs to the second floor when looking for their child's classroom. Much of this problem stems from the way in which they are directed by staff, however, the confusing layout only adds to the problem.

10.	Storage Unorganized	Teachers feel that they have adequate storage, it is just not properly organized or managed as it could be. As a result, it is hard to do an inventory of books and supplies, and there is no room for additional storage needs. Books and supplies stored in open instructional areas are routinely stolen or misplaced.
11.	Safety in the Parking Lot	Many teachers do not feel safe in the parking lot after school hours. Cameras were installed as part of an effort to make the parking more secure, but the cameras are not often monitored as expected. As a result, staff cars are still being broken into on a regular basis.
12.	Ventilation for Science Projects	Some teachers are precluded from conducting science projects due to a lack of ventilation to the outside.
13.	Open Space versus Self-Contained	Most teachers are using traditional educational styles of teaching appropriate in self-contained classrooms, not the styles appropriate for open space school such as team teaching, group work, and planning together. The disordered open plan configuration of the school has contributed to endless distractions from other classes and from constant traffic flow, as well as problems of privacy. The arrangement of instructional areas has been compromised further by a number of column obstructions that severely limit classroom adaptability.
14.	Safety from Intruders	Custodians monitor doors periodically, but still there are problems. Teachers do not bring personal items to school for fear of theft, and visitors do not always get a pass from the office or sign the log book: Some intruders still get through the cracks.
15.	Visibility & Surveillance	Teachers cannot always see children in stairwells near exists.
16.	Vision of One Stop Shop Interagency Approach	The desire for further structural changes follows closely with the vision of a one-stop shop interagency facility that provides a variety of community services.
17.	First Floor Instructional Area Layout	There is a desire on the part of teachers to capture existing space between the pods in order to increase the workable open instructional space.
18.	Crowded Administrative Area	Due to the influx of new functions, the administrative area has become overcrowded, the waiting room is inadequate for the amount of traffic, the principal has moved into the conference room, and other rooms have been taken over by administrative computer systems.

Moderate Priority Issues

19.	Landscaping Projects	Landscaping is minimal on the school site. Teachers suggested that students could get involved in planting trees as a science project to provide a sense of ownership in the school. A similar project, a garden, was attempted before with some positive results.
20.	Sharing Lockers	Students are forced to share lockers which reduces their sense of privacy over personal belongings, although it encourages then to learn to share. As a result, many things are stolen or lost such as coats, bags, books, and tennis shoes among other items.

21.   No Views out Windows   Windows were designed to be shatter proof, but, due to the frosted quality of the Plexiglas material, provide no views to the outdoors. Most windows cannot be opened for reasons of security, thus limiting the use of windows for fresh air. Windows deliver very little natural daylighting to the classroom spaces.

22.   Signs of Academic Unity   Although some signage is present, the demarcation between academies is not entirely clear. Suggestions included different color schemes, and more elaborate signs of entry into an academy.

23.   Student Work Displays   Improvements could be made in the student work displays. Some rooms are more chaotic and disorganized than others. More coordination is needed between decor and themes within and between academies.

24.   ADA Accessibility   There are currently no building codes or ADA regulations that would require the school to provide ADA accessibility unless a building experiences major renovation, addition or alteration.

25.   Plumbing & Flooding   Plumbing has on several occasions backed-up and flooded the hallways during severe storms. The question of responsibility was raised as to whether it is the city's backed-up drains or the school's older supply lines?

Low Priority Issues

26.   Non-use of Teachers' Lounge   The teachers' lounge is not used by teachers. The lounge is used for periodically working with disabled children and functions as an informal day-care center in the afternoon.

27.   School-wide Assemblies   There is a low priority need for a larger auditorium space for school-wide assemblies.