

THE EDUCATIONAL ADEQUACY OF NEW JERSEY PUBLIC SCHOOL FACILITIES:

Results From a Survey of Principals

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EXECUTIVE SUMMARY

Based on a survey of principals this study finds significant problems in the quality and adequacy of school facilities in New Jersey. The study also finds that principals may lack the resources to manage their school buildings. These problems are more severe in the poorest districts of the state.

OVERALL FINDINGS

1. A substantial number of New Jersey schools are not making the grade: approximately one third of New Jersey principals assigned a grade of C or below to the overall condition of their school and 10% assigned grades of D or F.
2. While a majority of principals (80%) thought that their schools were educationally adequate overall, many principals thought their schools came up short in terms of the adequacy of their school for meeting specific curricula needs such as science and music and art education.
3. Many principals thought their schools were less than adequate for recruiting and retaining teachers and did not provide adequate space for teacher and staff planning activities.
4. By a large margin, principals viewed their training in facility management as less adequate than their training for other activities that define their job.
5. According to principals, the school facilities planning and design process excludes important stakeholders.

EQUITY ISSUES

6. There are significant disparities in the overall condition and overall educational adequacy of schools in the poorest districts in New Jersey compared to schools in other districts. These disparities are even more evident in specific curricula areas.
7. Schools in these poorest districts have facilities less likely to attract and retain teachers.
8. Principals in schools in the poorest districts have more problems controlling the flow of school repairs and were less likely to find the repairs of good quality.

In these poorest districts, important stakeholders were even more marginalized in the planning of school facilities than in other districts.

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SCHOOL FACILITIES AS AN INPUT INTO EDUCATIONAL SUCCESS

A good school facility supports the educational enterprise. Research has shown that clean air, good light, and a quiet, comfortable, and safe learning environment are essential for academic achievement (see, for example, Cash 1993, Earthman and Lemasters 1996, Lemasters 1997, Lackney 1999, Schneider 2002). While socioeconomic factors clearly affect student academic performance, the condition and the adequacy of a school building are more directly under the control of the school district and state—and hence school facilities are an important policy tool for improving academic performance.

This importance of good facilities to learning is central to the Abbott decisions that have affected so much of New Jersey's education policy. In its 1990 ruling, the New Jersey Supreme Court explicitly stated that school facilities in the state's urban or "Abbott" districts were unsafe, overcrowded and not suitable for providing the breadth and depth of curriculum typically offered in high wealth suburban districts. The Court made clear that "adequate" facilities are "an essential component" of a "thorough and efficient" education under the State Constitution (Abbott II, 1990). Further, the Court specifically defined "adequate" as facilities that are safe and healthy, not overcrowded, and sufficient to deliver a rigorous curriculum based on New Jersey's extensive content and performance standards. The court has mandated that it is the state's responsibility to provide adequate school facilities in Abbott school districts.

The Abbott decisions laid the foundation for the Educational Facilities Construction and Financing Act (EFCFA) of 2000. EFCFA authorizes and governs New Jersey's public school construction program and was enacted to implement the State Supreme Court's 1998 ruling in *Abbott v. Burke* (Abbott V), which required the State to address the facilities needs in urban school districts. Under EFCFA, the State has also assumed responsibility to "identify" facilities needs in all other districts, and to "contribute" to the cost of meeting such needs.

As a result of the Abbott rulings, New Jersey has

perhaps gone further than any other state in the nation in addressing the issue of unequal school facilities. New Jersey is now required to fully fund and manage the improvement of the entire infrastructure of school facilities in the State's poorest school districts (Abbott V, 1998) and its responsibilities for the educational infrastructure in other poor districts is growing under EFCFA. How well has this effort gone?

In the following pages, we look at the condition of educational facilities overall, and then address equity issues by examining the distribution of various indicators across schools classified by District Factor Groupings. We show that significant problems still exist in the educational adequacy of school facilities in New Jersey.

In this report, we call attention to a part of the principal's portfolio that has not been fully researched and for which we believe principals may not be adequately trained—this is their role as an on-site administrator responsible for the school facility.

Indeed, we document that many principals, in their own judgment, are not well trained in facilities management. We also call attention to the fact that compared to other areas of the educational mission, principals feel that they do not have control over their facility or the way in which repairs and maintenance are conducted. We show that these problems are particularly severe in the poorest communities in New Jersey and highlight the many problems that remain despite the Abbott decisions and the Educational Facilities Construction and Financing Act.

SCHOOL FACILITIES FROM THE PERSPECTIVE OF NEW JERSEY PRINCIPALS

This study is based on a survey of New Jersey principals and was conducted in collaboration with the Education Law Center and the New Jersey Principals and Supervisors Association (NJPSA). Funding for the study came from the Ford Foundation through the Building Education Success Together (BEST) project.

This study assesses the quality of school facilities from the point of view of principals and examines how well principals feel they can manage their school facility. There are several focal points around which we organize our analysis, all of which are particularly important, given the legal and political context of New Jersey education policy.

1. What condition do principals find their schools to be in?
2. How educationally adequate do they find their schools?
3. How well do the school facilities support state curriculum standards?
4. How well trained are principals to manage facilities?
5. How involved are principals and other stakeholders in planning and designing new schools and repairs of existing ones?

Given the overwhelming concern for equity that characterizes New Jersey education policy debates, we look at how principals answer these questions across all of New Jersey, but we pay particular attention to the pattern of responses from the principals of schools in the poorest (district factor groupings A and B together) districts to other principals.

The data we analyze in this report is based on interviews with principals conducted via e-mail and fax in the Fall of 2003. Approximately 1300 of the 1700 principals who were members of the NJPSA addresses were e-mailed using a list provided by that association and asked to take the survey that was posted on the Internet. Two reminders were sent out to this group. About 400 members of the NJPSA did not have e-mail addresses and these principals were sent faxes of the survey to fill out and fax back. We did not have e-mail addresses for the 600 or so New Jersey principals who were not members of the NJPSA. We were, however, able to get fax numbers for most of them, who then received at least two faxes which included a cover letter and the survey itself. These principals were asked to fax back the survey and, when the surveys were returned, we entered the responses.

Principals are busy and getting them to respond to the survey was hard work. As noted, we used multiple e-mails and faxes, and we received 456 responses, a response rate of about 20%—about what many other surveys of principals achieve. We had responses from principals across the state and from all DFGs. However, principals in the poorest districts were underrepresented in our sample. For example, 18% of the principals that responded were in the school

districts with the district factor grouping of A or B. This was less than the close to 30% of all New Jersey schools that are in these low wealth districts. Elementary schools were also slightly underrepresented (67% of schools in New Jersey versus 62% in our study) as were special education schools (4% versus 1%). With this in mind, we turn to an analysis of the overall condition and educational adequacy of New Jersey schools as judged by experts in the field—the principals who lead them.

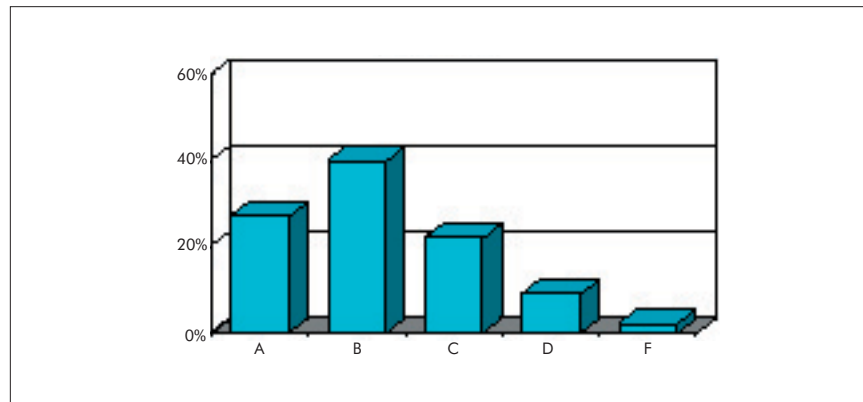
WHAT IS THE CONDITION OF NEW JERSEY PUBLIC SCHOOLS?

We begin our empirical investigation by looking at a simple overall measure of the condition of New Jersey schools as judged by principals. In the survey, we asked principals to assign a grade (on the A, B, C, D, F scale with which educators are familiar) to the overall condition of their schools. In Figure 1, we chart the distribution of these assigned grades. We can see that the modal grade is B, assigned by 40% of the principals. About one quarter of

the principals assigned a grade of A, but almost an equal number of principals gave their school a grade of C. About 10% of the principals gave their schools clearly unacceptable D or F grades.

We can use these grade data to compute a “grade point average” (GPA) using the standard conversion where an A=4, B=3...F=0. On average, New Jersey principals graded their schools 2.8 — a B-. There was some variation between levels of school, with both elementary and middle schools earning a GPA of around 2.8, while high schools received a lower grade of 2.6.

Figure 1. How do NJ principals grade the overall condition of their school facility?



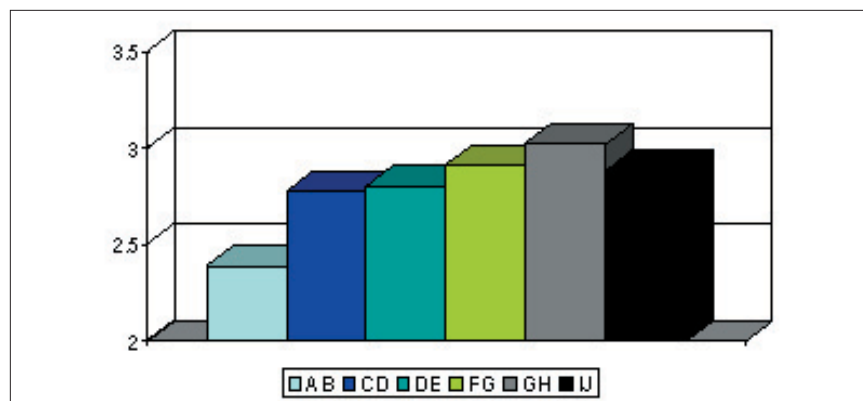
Whether or not a B- is an adequate grade is for policy makers and community members to decide. But whatever one might think of the B- grade point average, the number of grades of C and below should be troubling to all.

New Jersey, like most states in the country, has a wide range of school districts characterized by wealth. Because of the State’s responsibility for providing education and its long history of litigation, the extent of inequalities are central to educational policy making and to the legal

scrutiny to which New Jersey’s schools have been subject. Therefore, we look next at the distribution of grades by district factor grouping.

In Figure 2, we graph the average GPA for schools in different district factor groups. Using this metric, we can see that the principals of schools in the poorest districts report significantly lower grades than any other set of schools: schools in AB districts just barely make a grade of C+, while principals in every other set of districts assign on average B- or B grades.

Figure 2. Schools in the AB group earn a lower “GPA” on facility condition.



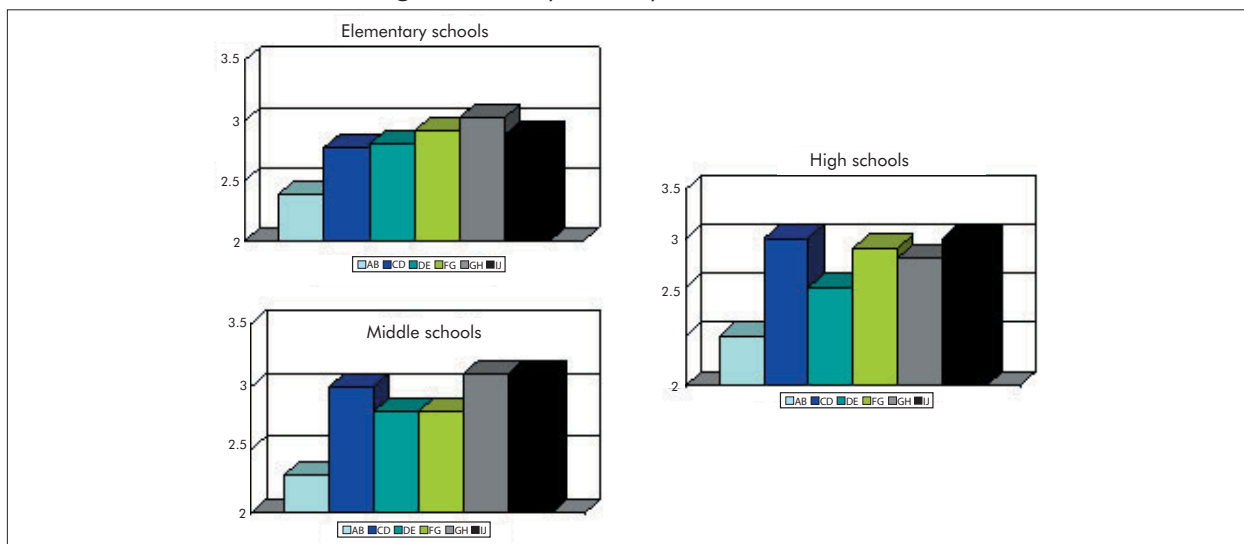
In Figure 3, we look at the grades assigned by different levels of schools (elementary, middle and high schools) within each district factor grouping. At each level, the condition of the schools in the AB districts lag behind the schools in other districts. This gap is particularly large among high schools.

EDUCATIONAL ADEQUACY

While it would be ideal if all schools were “A” schools, in New Jersey, it is constitutionally mandated that they be educationally adequate. We asked principals to judge the

adequacy of their school facilities with respect to specific curriculum areas (e.g., science, music/art) that are required by New Jersey law and are important to meeting State curriculum standards. As evident in Table 1, fewer than half of the principals across the state thought their schools were very adequate for Science, Art/Music and Phys Ed, while slightly more than half (54%) found their school very adequate for Special Education. Conversely, 15% of principals found that their schools were less than adequate for science, 18% found their schools less than adequate for art/music and phys ed, while 10% found their schools less than adequate for special education.

Figure 3. Facility “GPA” by school level and DFG



	Science	Art/Music	Phys Ed	Special Ed
Very Adequate	46%	48%	45%	54%
Somewhat Adequate	40%	33%	36%	36%
Less than adequate	15%	18%	18%	10%

Schools are increasingly involved in a wider range of activities than just delivering an academic curriculum. A central task of principals is to build ties between their school and the community. In Table 2 (next page), we see that many schools buildings are not adequate for creating these links.

Only 41% of the principals in the study thought their school was very adequate for preschool activities—and even

fewer thought their schools very adequate for after school programs. More critically, fully one-quarter of the principals thought that their schools were less than adequate for either activity. While the numbers are better for community access, only about half of the principals thought their school building and grounds were very adequate for community access.

	Preschool	After School	Building adequate for community	Grounds adequate for community
Very Adequate	41%	34%	54%	55%
Somewhat Adequate	33%	41%	34%	30%
Less than adequate	25%	25%	12%	15%

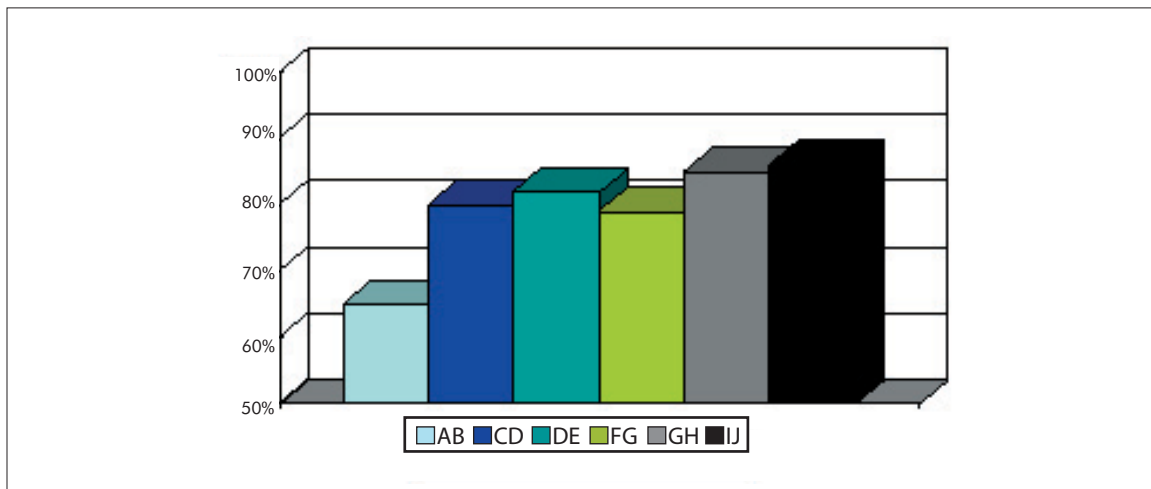
ADEQUACY BY DISTRICT FACTOR GROUPING

Schools in the poorest districts are less likely to provide educationally adequate schools than other schools. Figure 4 reports how principals in different DFGs evaluate the overall educational adequacy of their school building. We see consistent inequities between the conditions of schools in AB districts and other schools. While 80% of all New Jersey principals found their schools to be educationally adequate overall, only 65% of the principals in the AB schools felt the same. We should note that the disparity in

educational adequacy is most acute at the high school level. In AB districts, only 45 percent of high school principals thought their school was educationally adequate, less than half the level (95 percent) of principals in the wealthiest school districts (the IJ districts) who so judged their schools.

When we turn to the adequacy of facilities to support curriculum we find a similar sharp disparity between AB schools and other schools. In each curricula area, AB principals are much more likely to find their school less than adequate than principals in other DFGs. See Table 3.

Figure 4. Principals in AB schools are less likely to find their schools educationally adequate.



DFG	AB	CD	DE	FG	GH	IJ	Significance
Science	27%	16%	16%	12%	14%	8%	.001
Art/Music	35%	18%	17%	11%	14%	12%	.001
Phys Ed	34%	13%	18%	11%	13%	18%	.01
Special Ed	14%	14%	8%	8%	8%	10%	.12

Because the demands on schools in each of these curriculum areas shifts as children progress, in Figures 5-8, we look at the level of inadequacy in each of these curriculum areas by DFG and by level of school (elementary, middle, and high school). In almost every one of these subcategories, principals in the AB schools are more likely to find their schools inadequate and in some instances the differences

are quite stark. For example, principals of middle schools in AB districts are by far the most likely to find their schools inadequate for science education and for music and art, but in general the most significant and consistent gaps appear across the high schools where AB principals report the most problems aligning their school facilities with specialized curricula.

Figure 5. The inadequacy of **Science** facilities by school type and DFG: % less than adequate

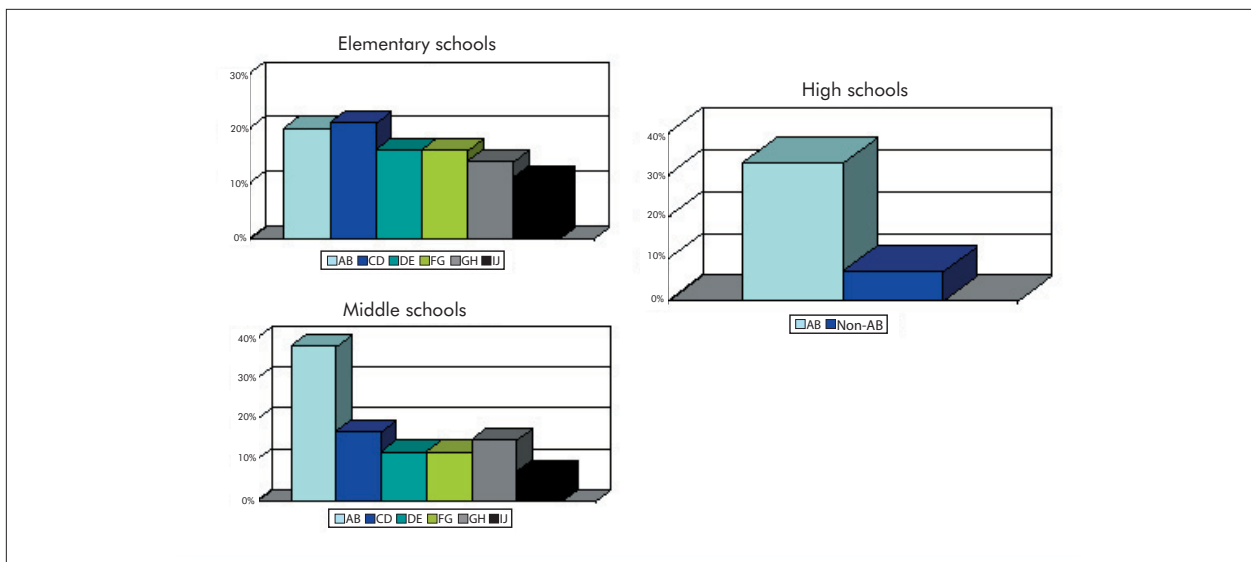


Figure 6. The inadequacy of **Music/Art** facilities by school type and DFG: % less than adequate

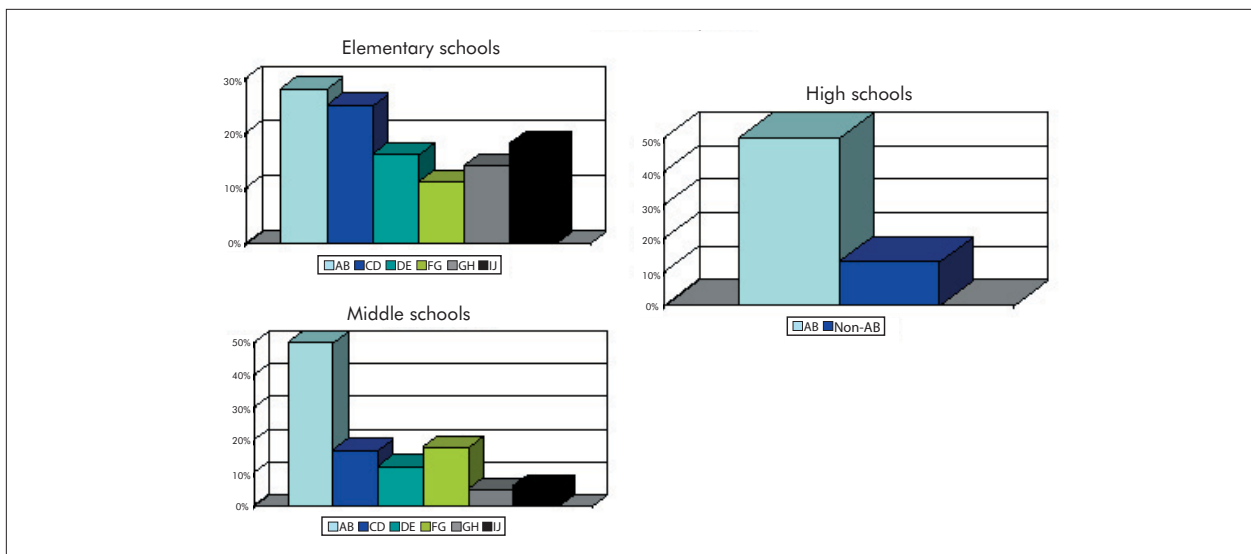


Figure 7. The inadequacy of **Special Ed** facilities by school type and DFG: % less than adequate

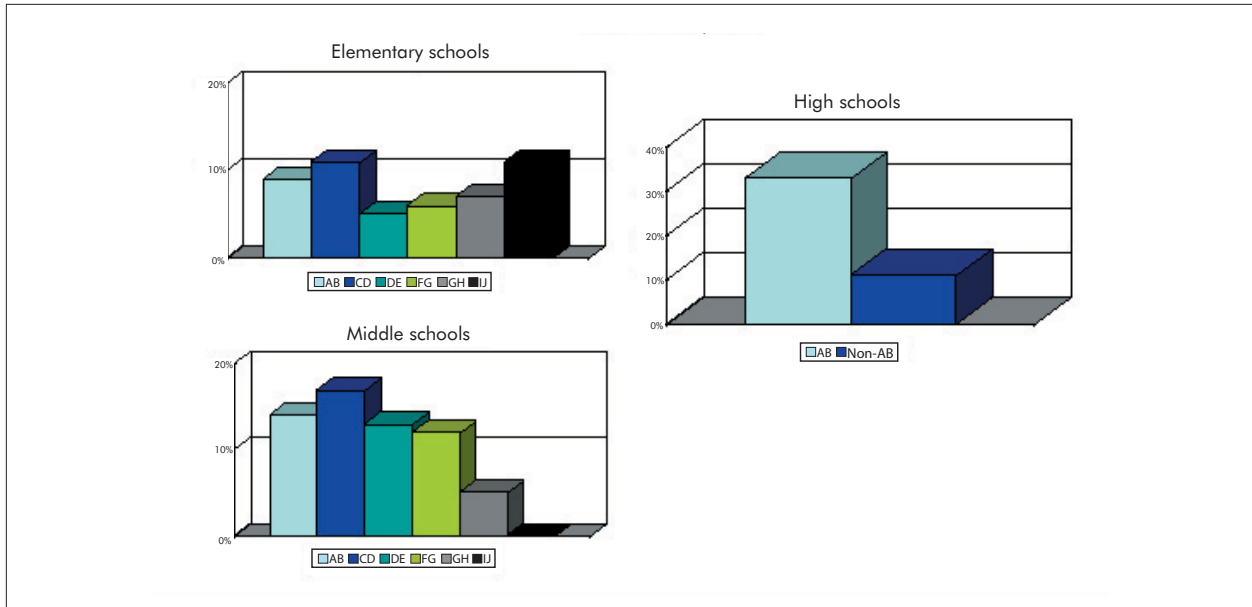
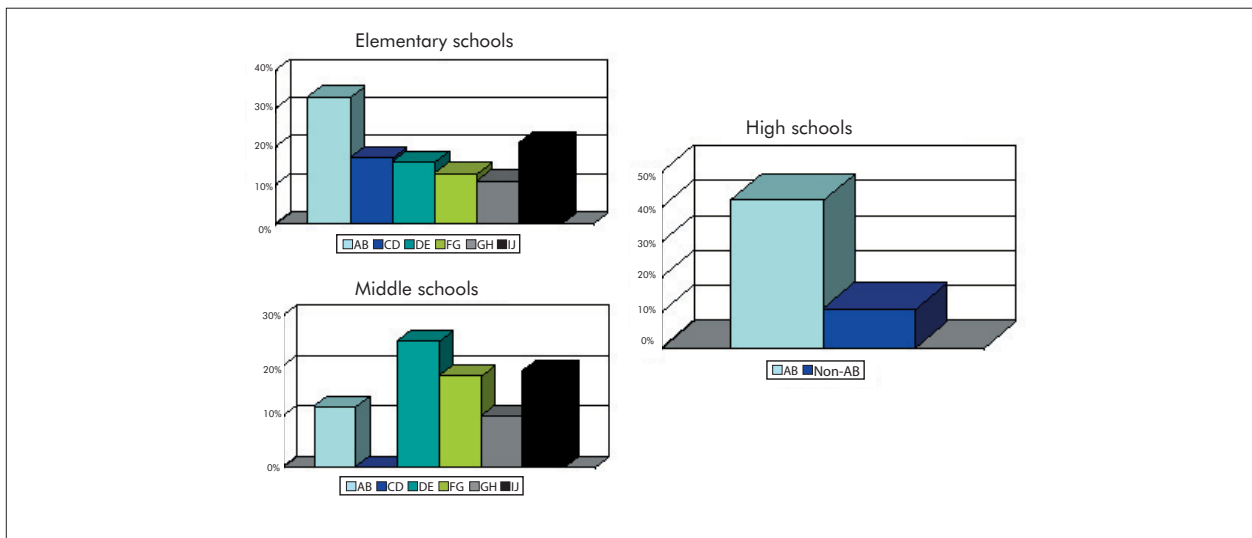


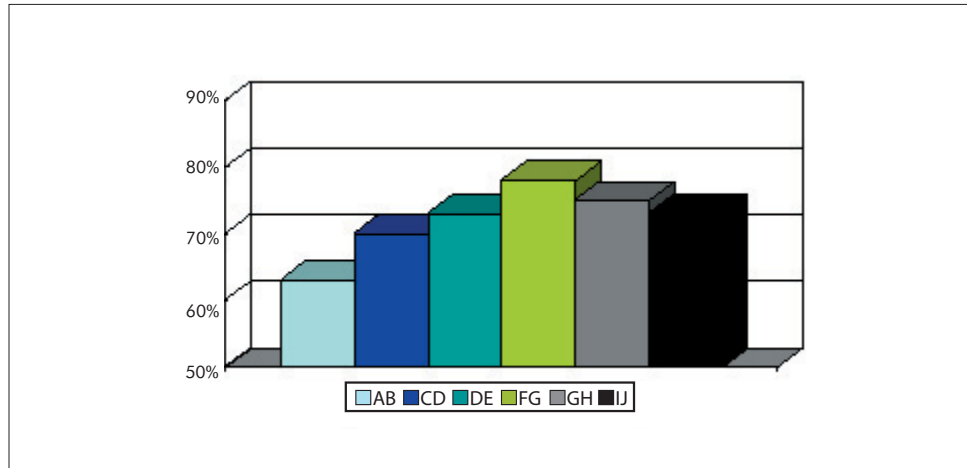
Figure 8. The inadequacy of **Physical Education** facilities by school type and DFG: % less than adequate



We also asked principals about whether they had the staff to adequately maintain their school. While almost three-quarters of all principals thought they had sufficient staff to maintain their buildings, that number falls to only 61% among the AB principals. See Figure 9.

In today's world of increasing curricula demands and high stakes testing, schools in the AB districts are clearly going to face a more difficult time than schools in more affluent districts.

Figure 9. Principals in AB districts are less likely to find their staff adequate to support their school facility.



FACILITY ADEQUACY IN OTHER DIMENSIONS

In Table 4, we report differences in the adequacy of the school with regard to pre-school, and after school programs and with regard to its ability to build ties its community. Here we find that principals in AB districts are not worse

off with regard to preschool or after school activities. This is likely a result of the effect of the pre-school initiative required by the Abbott case. However, the AB districts are consistently more likely to find their schools and grounds less than adequate for community use.

DFG	AB	CD	DE	FG	GH	IJ	Significance
Building adequate for Preschool	19%	29%	30%	25%	33%	17%	.28
Building adequate for After school	27%	42%	31%	14%	25%	19%	.12
Building adequate for community	25%	16%	11%	4%	10%	10%	.01
Grounds adequate for community	32%	18%	15%	5%	10%	12%	.001

THE AGE OF SCHOOLS: A POSSIBLE CAUSE OF DIFFERENCES

One reason schools in the AB districts have more problems may be simple: they are older. Overall, across New Jersey, the average school building is 53 years old. However, in the AB districts, the average age is 67.

Looking at the age distribution another way, as a rough rule of thumb, the physical plant of schools begin to require significantly more attention after they are around 50 years old. Across New Jersey, 45% of the schools have reached that age. In contrast, 62% of AB schools have reached that critical point. While school age is not necessarily an indicator of a poor school facility (there are many beautiful and highly effective old school buildings), an old school that is not adequately maintained is a recipe for problems.

THE ROLE OF FACILITIES IN ATTRACTING AND RETAINING TEACHERS

Next we explore an additional avenue that links school facilities to good educational outcomes. We argue that a high quality school facility can affect the success principals have in meeting one of their most crucial and central tasks: attracting and retaining good teachers. Keeping teachers has always been important for the success and effectiveness of any school, since high teacher turnover is costly and disruptive, but keeping good teachers is about to become more important.

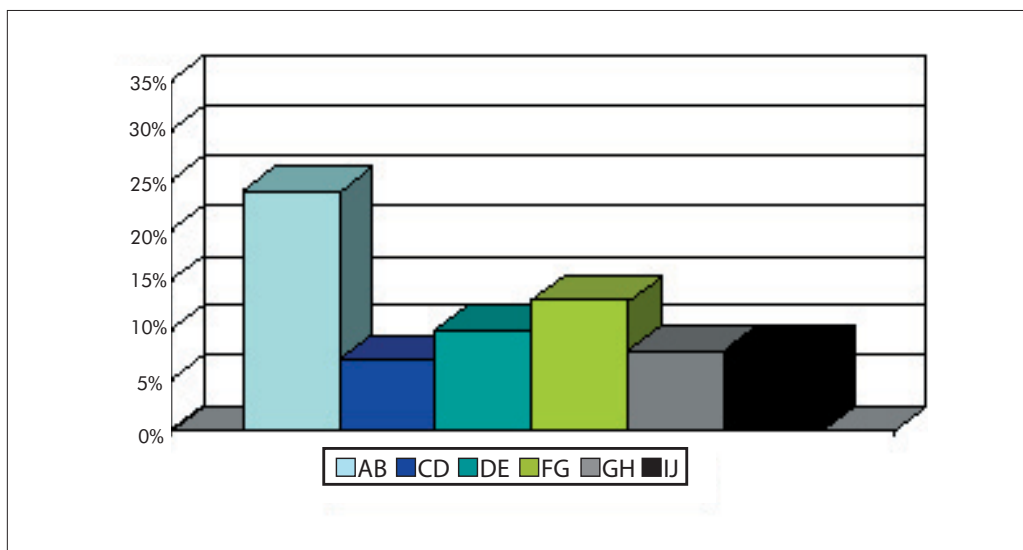
A major component of the No Child Left Behind

Act (NCLB) mandates that all teachers in “core subjects” be “highly qualified” by 2005-6. Leaving aside the debate over what “highly qualified” means, few would challenge the idea that the nation’s schools needs to attract the best possible teachers to the profession. However, as school administrators and education researchers have long known, hiring bright new teachers is only part of the problem—the attrition of both new and experienced teachers is as great a challenge for schools and school systems.

While most research has focused on the importance of salaries in attracting and retaining teachers, salaries are not all that matter. Hanushek, Kain and Rivkin (forthcoming) argue that teacher preferences across a range of job and school conditions may be just as important as salary in the retention decision. According to their study, “teachers might be willing to take lower salaries in exchange for better working conditions.” Key to good working conditions is the condition of the school building. Using data from a survey of teachers in Washington DC, Buckley, Schneider and Yi (2003) show that the quality of the school facility affects the likelihood that teachers will leave a school.

For this reason, it is disturbing that only about half of the New Jersey principals reported that their school was very adequate for recruiting and retaining teachers. It is even more disturbing to look at the picture in the AB district schools. As evident in Figure 10 almost one-quarter (24%) thought their schools less than adequate for this critical job, a proportion 2 to 3 times higher than found in other districts.

Figure 10. Principals in AB schools find their schools less adequate for teacher recruitment and retention.



As the complexity of educating children has increased and as the importance of teamwork and joint planning for educational activities has permeated the teaching profession, adequate space for teacher and planning has become more important than ever in terms of creating an environment in which teachers will be productive—and will stay in a school. We see another indicator of a weakness of schools in New Jersey: only 45% of the principals said that their school was very adequate for supporting teacher/staff planning. We should note that on this particular measure there were no significant differences between schools grouped by DFG—it is a state-wide problem.

PLANNING AND MAINTAINING FACILITIES

Given the focus on facilities in this paper, we turn next to a set of questions designed to measure how well trained principals think they are for various aspects of facilities management and how much control they feel they have over repairs to their school.

Principals are highly skilled individuals, with years of

classroom, in-service, and on-the-job training. Reflecting their years of training, the New Jersey principals we surveyed judged themselves to be well trained across a gamut of leadership and management tasks. Figure 11 shows that over 80% of the principals in our study thought that they were well trained in providing academic leadership, ensuring teacher quality, general management, managing human resources, and student discipline. Slightly fewer principals—but still over 70%—thought they were well trained for managing community relations. There is one glaring exception to this overall highly positive assessment—fewer than half of the principals in our study thought they were well trained for facilities management.

In Figure 12 (next page), we report parallel data concerning the amount of control that principals feel they have over these same components of their job. As evident in that figure, a large number of principals thought that they had control over most components of their job. Facilities stand out again as a notable exception: Just about one-fifth of the principals in our study thought they had a “great deal” of control over facilities.

Figure 11. Principals are not well trained for facilities management.

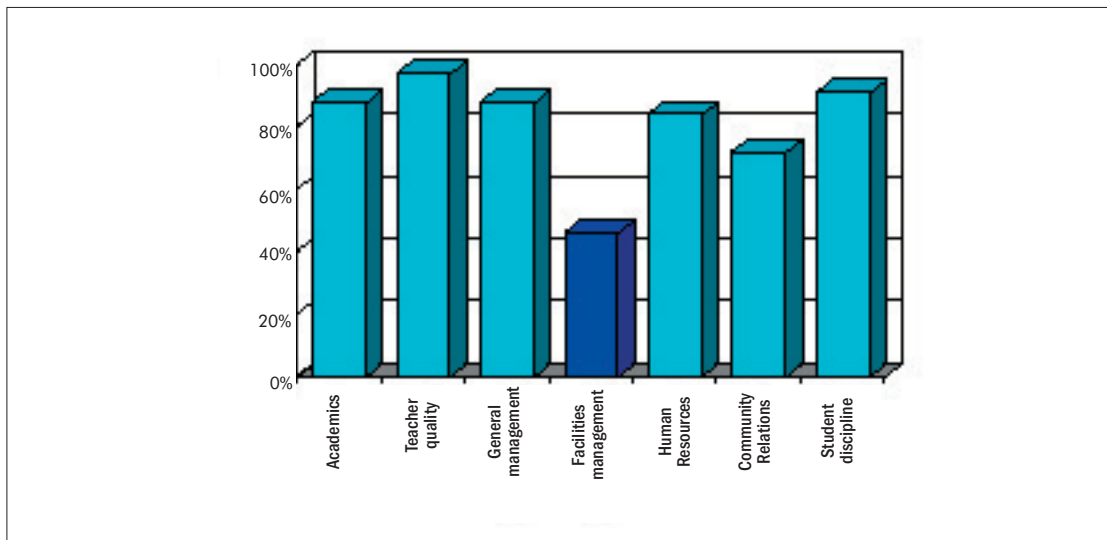
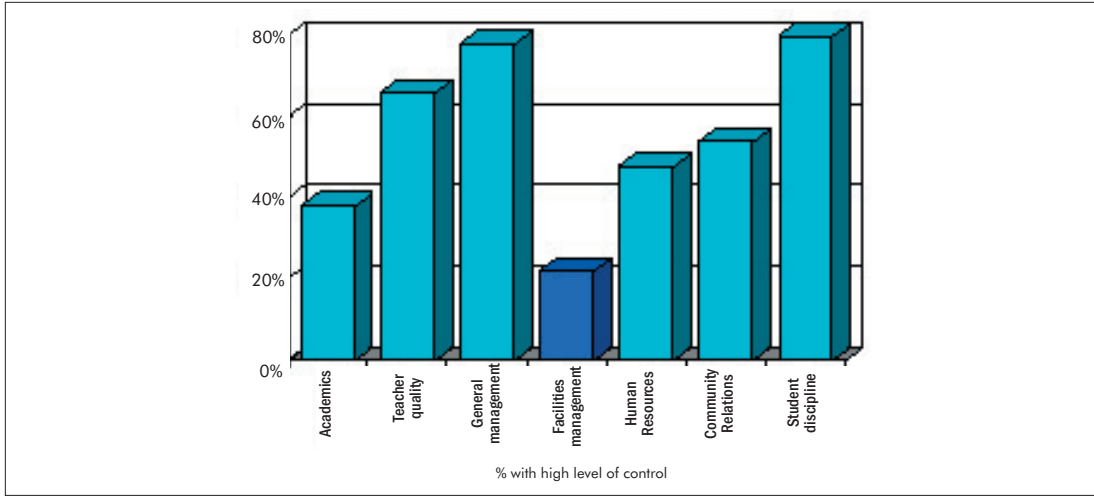


Figure 12. Principals are less likely to think they have control over their facilities than other components of their job.



To pinpoint some of the reasons why they felt that they lacked control over facilities, we asked principals a series of specific questions about how repairs on their buildings were managed and implemented. To keeping facilities in good working order, ideally repairs should be done in a timely fashion and principals should have substantial input into the timing of them. Principals should be able to work around any disruptions caused by facility maintenance, and they should have confidence that the schedule of repairs is adhered to. The repairs should also, of course, be of high quality.

To measure these aspects of the principal’s control over the job, we asked principals a series of questions about how repairs are conducted in their building. These included the following questions:

1. Are you aware of a schedule for major repairs to your school building? If yes, we asked:

(i) Does this schedule meet the needs of your school?

(ii) Do you have confidence that this schedule will be followed?

2. When you submit work orders, can you affect the order in which they are completed?
3. When repairs have been completed, in general how would you rate the quality of work?

In addition, we asked principals to rate the quality of janitorial and custodial services in their school. We also asked principals to judge the extent they had input into the school facilities and design and the extent to which their staff and members of their community were involved in that process.

We find both good news and bad. For example, in Table 5, we see that a large majority of principals (75%) say they know the work schedule for repairs and virtually the same number say that the schedule meets the school’s needs—but these data also mean that fully one-quarter of the principals don’t know the schedule and the same number of principals feel that the schedule is not appropriate for the needs of the school. Moreover, about 60% of the principals say they can affect the order of repairs and are confident that the schedule of repairs will be followed, but 40% do not.

Principal knows schedule	75%
Schedule meets school’s needs?	74%
Confident schedule will be followed	61%
Affect order of repair	58%
Repairs good?	73%
Janitorial/custodial service good?	69%

When work is done, 72% of the principals said that the work was good, but 25% said the work was only “fair” (3% thought the work was poor). The number of principals who judged their custodial and janitorial staff good was roughly the same (68% good, 27% fair, 5% poor).

We know that educational management and school leadership requires collaboration, outreach and the involvement of stakeholders. However, we find that facilities

planning and school design are not very open to the input and involvement of key players. For example, less than half of the principals we surveyed thought their input into the design and planning process was high. But the role of other stakeholders was even more limited—overall, only 26% of the principals thought their staff was highly involved in facilities planning and only 18% thought community involvement was high. See Table 6.

Table 6: What do principals think about the local school and community involvement in the planning and design of major building improvements or new schools?	
High level of personal input	44%
High level of staff involvement	26%
High level of community involvement	18%

EQUITY IN PLANNING AND MAINTAINING FACILITIES

In this section we look at the distribution of these responses across schools categorized by district factor groupings. While we found no significant differences across principals in different DFGs in the level of training they report having, we do find significant differences in how repairs are conducted in different districts. Most notably, we find that principals in AB districts are much less likely to know the schedule of repairs compared to principals in

any other DFG, with a difference of anywhere from 13 to 20 percentage points depending on which other category of school is compared. See Table 7. AB principals are also much less likely to think that they can affect the order of repair and they are less likely to be supported by a good janitorial and custodial staff. They are far less likely to rate as good the repairs to their schools (here the gap is as much as 35 percentage points again depending to which DFG we are comparing the AB schools).

Table 7: How much input do principals have over facility repairs (% principals saying yes)							
	AB	CD	DE	FG	GH	IJ	Significance
Principal knows schedule	61%	81%	74%	82%	76%	74%	.05
Schedule meets school’s needs?	74%	78%	82%	79%	69%	68%	ns
Confident schedule will be followed	57%	62%	56%	63%	58%	64%	ns
Affect order of repair	41%	70%	48%	60%	58%	68%	.003
Repairs good?	55%	80%	75%	78%	76%	71%	.03
Janitorial/custodial service good?	51%	61%	76%	72%	75%	67%	.003

AB principals are also less likely to think they have a high level of input into the planning process and they are, by far, less likely to think their community has high involvement in the facilities planning and design process.

See Table 8. Clearly, when it comes to controlling what goes on in their facilities, AB principals are at a distinct disadvantage.

Table 8: What do principals think about the local school and community involvement in the planning and design of major building improvements or new schools?							
	AB	CD	DE	FG	GH	IJ	Significance
High level of personal input	24%	38%	47%	46%	54%	46%	.006
High level of staff involvement	17%	23%	32%	27%	26%	26%	ns
High level of community involvement	4%	7%	19%	20%	27%	25%	.001

CONCLUSIONS

In concluding, we first highlight the most important *overall* points in this study. We then focus on the fundamental *equity* issues that appear throughout this report.

OVERALL FINDINGS

First, principals on average assign an overall grade of B- to their school facilities. However, approximately one third of New Jersey principals assigned a grade of C or below to the overall condition of their school and 10% assigned grades of D or F. In short, according to principals, individuals who have the most direct knowledge of the quality of the school buildings, a substantial number of New Jersey schools are not making the grade.

While a majority of principals (80%) thought that their schools were educationally adequate overall, many more principals found their schools coming up short in terms of the adequacy of their school for meeting specific curricula needs in science, music/art, physical ed and special ed, for preschool and after school activities, and for community access.

Even more principals thought their schools were less than adequate for recruiting and retaining teachers and for providing space for teacher and staff planning activities.

By a large margin, principals viewed their training in facility management as less adequate than their training for other activities that define their job.

Finally, levels of input into the facilities design and maintenance process were very low. Less than half of the principals in the survey thought they had a high level of input into the facilities planning and design. The level of staff and community involvement was even lower. Together, these data identify a planning and design process that is highly centralized, excluding the input of important stakeholders with intimate knowledge of what they need from its schools—one of the most important assets a community has.

EQUITY ISSUES

School facilities in low wealth districts were judged to be in poorer condition and less adequate than schools in more affluent districts. The facility needs of schools in the AB districts clearly need attention.

Among the most important results:

There are significant disparities in the overall condition

and overall educational adequacy of schools in AB districts compared to schools in other districts. These disparities are even more evident in specific curricula areas.

Schools in AB districts may face an even greater challenge in the near future as the competition for the “highly qualified” teachers mandated by the No Child Left Behind Act come on-line: AB principals were far more likely than other principals to find their schools lacking in the ability to attract and retain teachers.

Principals in AB schools were also more likely to have problems controlling the flow of school repairs and were less likely to find the repairs of good quality. Moreover, while across New Jersey, levels of principal and community involvement in facility management were low, in AB districts important stakeholders were even more marginalized. As the State of New Jersey has responded and continues to respond to the Abbott decisions and EFCFA, it must exercise caution lest it prevent local stakeholders involvement in the planning and design process—input which is important to creating high performance community-based schools.

REFERENCES

- Antos, Joseph R. , and Sherwin Rosen. "Discrimination in the Market for Teachers." *Journal of Econometrics* 2 (1975): 123-50.
- Baugh, William H., and Joe A. Stone. "Mobility and Wage Equibration in the Educator Labor Market." *Economics of Education Review* 2, no. 3 (1982): 253-74.
- Buckley, J., M. Schneider, and S. Yi. 2004. "Fix It and They Will Stay: The Effects of School Facility Quality on Teacher Retention in Urban School Districts." Available at: <http://www2.bc.edu/~bucklesj/retention04.pdf>
- Cash, C. "A Study of the Relationship between School Building Condition and Student Achievement and Behavior." Unpublished doctoral dissertation, Virginia Polytechnic Institute and State University, 1993.
- Chambers, Jay G. "The Impact of Collective Bargaining for Teachers on Resource Allocation in Public School Districts." *Journal of Urban Economics* 4, no. 3 (1977): 324-39.
- Earthman, G. I. , and L. Lemasters. "Review of Research on the Relationship between School Buildings, Student Achievement, and Student Behavior." Paper presented at the Annual meeting of the Council of Educational Facility Planners International., Tarpon Springs, FL 1996.
- Hanushek, E., J.F. Kain, and S. Rivkin. "Why Public Schools Lose Teachers." Cambridge, MA: NBER Working Paper No. w8599, 2001.
- Hanushek, Eric A., and Javier Luque. "Smaller Classes, Lower Salaries? The Effects of Class Size on Teacher Labor Markets." In *Using What We Know: A Review of the Research on Implementing Class-Size Reduction Initiatives for State and Local Policymakers*, edited by Sabrina W.M. Laine and James G. Ward, 35-51. Oak Brook, IL: North Central Regional Educational Laboratory, 2000.
- Lackney, J. A. "Assessing School Facilities for Learning/ Assessing the Impact of the Physical Environment on the Educational Process." Mississippi State, Miss.: Educational Design Institute., 1999.
- Lemasters, L. K. "A Synthesis of Studies Pertaining to Facilities, Student Achievement, and Student Behavior." Unpublished doctoral dissertation. (ED447687), Virginia Polytechnic and State University., 1997.
- Murnane, Richard J. "Teacher Mobility Revisited." *Journal of Human Resources* 1 6, no. 1 (1981): 3-19.
- Schneider, Mark. "Do School Facilities Affect Academic Outcomes?" Washington, D.C.: National Clearinghouse for Educational Facilities, 2002.

APPENDIX 1: ABBOTT BACKGROUND

In its landmark 1990 ruling in the Abbott case, the NJ Supreme Court concluded that school facilities in the state's urban or "Abbott" districts were unsafe, overcrowded and not suitable for providing the breadth and depth of curriculum typically offered in high wealth suburban districts. The Court also concluded, and reaffirmed in several later rulings, that the "thorough and efficient" education clause of the State constitution includes "adequate school facilities." Further, according to the Court, the State has a direct and primary obligation to ensure the provision of adequate facilities in local school districts, particularly in the urban districts where "deplorable" physical conditions "prevent" students from receiving a thorough and efficient education and where low- property wealth impedes bond financing of needed construction.

From 1990 through 1997, the State took little action to address the deplorable conditions in urban school facilities found by the Court in 1990. Frustrated by this lack of action, in 1997 the Court directed the New Jersey Department of Education (NJDOE) to conduct a complete needs assessment of the deficiencies in the Abbott school facilities, and to propose a plan to address those needs. The results of the NJDOE assessment and recommendations were presented by the then Commissioner of Education to a Superior Court Judge appointed by the Court to serve as Special Master in the Abbott case. Following hearings in late 1997, the Judge issued a report to the Supreme Court accepting the Commissioner's recommendations for a State program to manage and finance the improvements necessary to ameliorate identified problems in the school buildings. The Supreme Court in the 1998 *Abbott V* ruling accepted the recommendations that now form the foundation of the Abbott School Construction Program.

Although the Abbott rulings requiring New Jersey to manage and fund a program to upgrade the school buildings applies specifically to 30 Abbott districts, the Constitutional obligation of the State to provide all students with a "thorough and efficient" applies to all school districts. And, the Court specifically ruled in *Abbott II* that school facilities are a part of a thorough and efficient education.

To that end, the Legislature in EFCFA approved \$6 billion for Abbott districts and \$2.6 billion for non-Abbott districts. All Abbott district approved projects will be 100% funded. For non-Abbott districts, the State funding share is 115% of the district's eligible state aid percentage, except that no district shall receive less than 40% of approved costs. If any district which is included in DFG A or B, other than an Abbott districts is having difficulty financing the

local share of the school facilities project, the district may apply to the commissioner to receive 100% State support for the project and the commissioner in turn may request approval from the Legislature. In addition, the SCC will be responsible for managing and constructing projects for any non-Abbott district that receives more than 55% aid. Since many of the A and B districts are in that category, the SCC is responsible for upgrading the school facilities in most of the state's poorest districts.

APPENDIX 2: CHARACTERISTICS OF THE PRINCIPALS IN OUR SURVEY

We asked principals for some background demographic information. Turning first to age, principals in our sample averaged 51 years of age, they had been principal on average for 11.6 years of which 8 had been spent in their current school. See Table A2.1. Principals in the AB districts shared the same age distribution. An equal percentage (60%) statewide and in AB districts report having received training in facilities management.

Overall, about 40% of New Jersey principals in our study were female—the same percent as in AB schools. We do find differences in the racial identification of principals. While fewer than 7% of all New Jersey principals in our study identified themselves as Black and only about 1% said they were Hispanic, 26% of AB principals said they were Black and 4% said they were Hispanic.

Given these demographics it is not likely that the greater problems that the AB principals reported with facilities was generated by some personnel characteristics, rather it is likely that some combination of greater needs, fewer resources and greater institutional constraints have combined to generate a much more difficult environment for these individuals seeking to provide an adequate education to their students.

Table A2.1: Demographic characteristics of principals in study		
	All principals	AB principals
Average age	51	51
Years served as principal	11.6	12.1
Years principal in current school	8.0	9.1
% received facilities training	61.6%	59.7%
% non-Hispanic Black	6.6%	25.7%(*)
% Hispanic	1.1%	4.3%(*)
% Female	40.3%	39.5%
(*) difference statistically significant at $p < .05$		