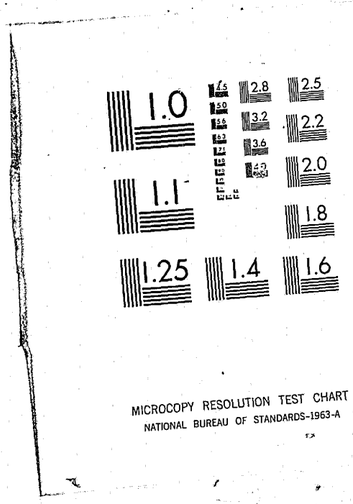

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U. S. Department of Justice
National Institute of Justice

Crime Prevention Through Environmental Design

The School Demonstration in Broward County, Florida

Executive Summary

a publication of the **National Institute of Justice**

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Harry M. Bratt
Acting Director

Crime Prevention Through Environmental Design:
The School Demonstration in Broward County, Florida

Executive Summary

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U.S. Department of Justice
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Abstract

The Broward County CPTED School Demonstration was an experimental program designed to reduce crime and the fear of crime in suburban high schools. The program included tactics involving physical modifications, police and security force activities, school administrators, teachers, and student organizations.

The School Demonstration was part of a larger program intended to develop and demonstrate the utility of a multi-strategied approach to crime prevention, known as Crime Prevention Through Environmental Design. The other demonstrations in the program were a commercial demonstration in Portland, Oregon, and a residential demonstration in Minneapolis, Minnesota. The CPTED program also included the development of manuals for the analysis of crime problems and the implementation of prevention programs.

The site of the School Demonstration was four high schools in Broward County, Florida. Over the period of the demonstration, incidents of theft and assault were significantly reduced.

Acknowledgements

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Other key members of the Westinghouse staff were Robert A. Carlston, Project Manager for the first phase of the project; Timothy D. Crowe, principal developer of the School Demonstration Plan; Larry Bell; Lewis F. Hanes; W. Anthony Wiles; and Joseph W. Fordyce. Key consultants included Dr. James Tien, Dr. John Zeisel, Thomas Reppetto, Dr. Charles Wellford, Richard Gardiner, W. Victor Rouse, and Dr. George Rand.

Appreciation is expressed to the many individuals from Broward County who helped in executing the demonstration. Foremost among these are Joseph I. Greeley, local director of the CPTED Demonstration; Leon Alford, local CPTED coordinator; James Mauer, Superintendent of Broward County Schools; Edward J. Stack, Chief of Broward County Police; and Ralph Turlington, Commissioner of the Florida Department of Education.

INTRODUCTION

Crime Prevention Through Environmental Design is an attempt to reduce crime and fear in a particular setting by reducing criminal opportunity, while simultaneously fostering positive social interaction. CPTED develops solutions through a careful analysis of a) the pattern of criminal behavior in the area and b) the behavior and perceptions of its legitimate users.

A principal means by which CPTED attempts to achieve its goal is by modifying the physical environment: e.g., lighting grounds, providing activity areas, and adding windows. Physical changes can have a significant effect on achieving the CPTED goals when they are designed and executed with the consent and active support of the users of the setting. CPTED, however, does not rely exclusively on physical strategies. It also incorporates social tactics which, for example, enable the residents of a neighborhood to become better acquainted with one another; managerial tactics, such as economic incentives for complying with security recommendations; and law enforcement tactics. CPTED, in short, does not advocate a single tactic for a particular crime problem. Rather, it offers a range of tactics for reducing criminal opportunity at a site. Moreover, the approach attempts to select tactics which will interact positively with each other to produce a greater net effect.

There are four basic dimensions of the crime opportunity structure which the CPTED approach attempts to manipulate through its specific tactics:

* Movement control. This dimension concerns the ease with which an offender can move through a site. It consists of such things as limiting the use of grounds, paths, and corridors to specified users. Real and symbolic barriers may be employed to inform outsiders that a particular environment is restricted. Movement control may also be achieved by controlling access through hardware such as gates and locks. Regardless of its form, the objective of movement control is to put

the offender at greater risk of detection and apprehension if he or she should attempt to engage in a crime.

* Surveillance. The objective of these tactics is to put the offender under threat of being observed, and therefore identified and apprehended. Surveillance may be conducted in a formal manner, as when police or other security personnel perform routine checks of an area. Surveillance may be aided by mechanical means, as when CCV-TV is used in school grounds, corridors, and classrooms. It may also be informal or natural, as when students or teachers take note of strangers and even inquire as to their business.

* Activity support. These tactics reinforce existing activities or introduce new activities in a setting enabling the legitimate users to become acquainted with each other and therefore to be in a better position to distinguish strangers from legitimate users. Activity support may consist of activities directly concerning crime prevention. It may also consist of activities supporting social interaction which, in turn, creates a better environment for the implementation of preventive activities.

* Motivational reinforcement. This dimension involves activities which enhance the desire of students to engage in crime prevention activities. Motivation may take the form of social incentives, such as offering additional privileges to students who support crime prevention activities.

In addition to being an experiment in a multi-strategied approach to crime prevention, the CPTED program was intended to develop a method for project implementation which would involve broad local participation.

THE CPTED DEMONSTRATION PROJECT

The CPTED approach is experimental. For the most part, crime prevention programs have tended to focus on a single problem and a single solution. Insofar as physical modifications were advocated as part of a preventive program, the emphasis was on target hardening. In the late 1960s a new attitude toward the role of the physical environment in crime prevention emerged. The work of Elizabeth Woods, Jane Jacobs, and Schlomo Angel helped bring about this new understanding. Perhaps most significant was the work of Oscar Newman, whose theory of "defensible space" -- and demonstration projects based on it -- showed that the physical environment could promote improved surveillance, enhance "neighboring," and establish clear territorial control of areas in a site. The role of the physical environment in crime prevention was thus seen not

only as increasing the effort necessary to perpetrate a crime, but also as promoting the kind of social environment which would increase surveillance and mutual aid.

In 1974, the National Institute of Law Enforcement and Criminal Justice (now the National Institute of Justice) awarded a contract to a consortium of firms headed by Westinghouse for the development of the CPTED approach. As initially conceived, the approach was to demonstrate the applicability of the "defensible space" concept in a number of typical urban settings. Newman's work had focused primarily on public housing projects; the CPTED demonstrations were to be applied in schools, commercial settings, private residential neighborhoods, and mass transportation. The expectations for the program during its first two years were overly optimistic. Early in the effort it became apparent that the scientific knowledge upon which the program could be based was inadequate to the task. Then, too, the Westinghouse project team found the concept of "defensible space," as defined in Oscar Newman's early work, to be too limited for direct application in the program environment. Indeed, Newman himself was beginning to seek ways to go beyond the physical-environment focus of his earlier work. The degree to which physical design alone could generate strong proprietary attitudes among the users of public environments was very questionable. For example, no design directives existed that could hope to develop territorial feelings in the thousands of individuals briefly passing through a subway station. As a partial result of this realization, the transportation demonstration was removed as one of the components of the CPTED program.

Three projects were executed under the program: the school demonstration in Broward County, Florida, which is reported here; a commercial demonstration in Portland, Oregon (reported in Crime Prevention Through Environmental Design: The Commercial Demonstration in Portland, Oregon); and a residential demonstration in the Willard-Homewood neighborhood in Minneapolis, Minnesota. At the same time, the Hartford Center for Criminal and Social Justice conducted a similar demonstration in Hartford, Connecticut (see Reducing Crime and Fear: The Hartford Neighborhood Crime Prevention Program, 1979).

The purpose of the demonstration was twofold: first, to test the CPTED approach in a variety of different sites; and second, to develop and disseminate information on the process involved in planning and implementing similar programs. The results of the latter objective of the program are reported in Crime Prevention Through Environmental Design: an Operational Handbook.

The results of the demonstration do not conclusively validate the CPTED approach. The Portland commercial

demonstration was relatively successful. The schools in the demonstration achieved a reduction in crime and fear, but the results were more modest than those achieved in Portland. Finally, the residential demonstration failed to achieve its anticipated effect. However, the simultaneous Hartford demonstration showed that the basic CPTED approach advocated could be successfully implemented in a residential neighborhood.

The purpose of reporting on the demonstrations is not solely to document where they were successful. It is also to share the difficulties involved in engaging in such programs. It is hoped that future attempts will be able to avoid some of the pitfalls and extend the possibility of success.

SITE SELECTION

School crime is a national problem causing increasing concern. This concern has been voiced by Congressional, governmental, school, public, and media representatives. Analysis of existing data -- especially the 27-school district survey conducted by the National Association of School Security Directors (see table 1) and data from the National Crime Panel surveys -- indicates that burglary, vandalism, assault, robbery, and extortion are all of serious magnitude. Other sources indicate that theft is a widespread problem. While the problem of fear has been less studied, current research efforts suggest that fear of crime is also a debilitating influence on the school population. An article in a national education journal, Today's Education, stated that "there is fear of danger and violence in regard to school yards, school halls, and school rooms. Our respondents, to a high degree, report an atmosphere of fear (and) teachers may also have some of these feelings... Under these conditions, given the best good will, the best techniques and the ideal curriculum learning would be minimal in such an atmosphere." (February 1979)

In assessing the applicability of CPTED to a school demonstration, the consortium used crime-related, environment-related, and program-related criteria. The following points were considered to be particularly relevant:

* The target site should have a sufficient level of crime and fear to justify a CPTED effort and must be amenable to the program's time and cost factors.

* The crime problems found within the target site should be those that can be alleviated by CPTED.

* There should be readily available crime and environment data. Generally, the delineation of crime-environment

Enrollment	Burglary		Armed Robbery		Assaults		Sex Offenses		Vandalism ($)		
	No. of Offenses	Per Bldg.	No. of Offenses	Per 1000 Stud.	No. of Offenses	Per 1000 Stud.	No. of Offenses	Per 1000 Stud.	Total (in thousands)	Per 1000 Stud.	Per Bldg.
Under 25,000	194	1.37	0	0	114	2.30	7	0.14	232.2	4,693	1,635.9
25-50,000	590	2.60	136	1.06	149	1.16	51	0.40	220.9	1,717	973.1
50-75,000	918	2.14	12	0.04	200	0.75	54	0.20	349.7	1,310	815
75-100,000	1,402	1.99	29	0.06	407	0.90	41	0.09	275.3	612	391.6
100-200,000	4,989	3.56	130	0.13	2,328	2.40	61	0.06	1,051.2	1,084	749.8
Over 200,000*	789	2.31*	3	0.01	1,984	2.43	24	0.03	1,135.3	1,389	1,145.6
Total	8,882		310		5,182		238		3,264.6		
Aver. Incidence		2.74		0.12		1.93		0.09		1,217	838.4

NOTE: Not all school districts included in the sampling reported crimes for the entire base year.

*Burglary incidents were only reported for one district with 341 schools. The burglary per bldg. figure reflects this discrepancy.

1 - Survey of Crime in Schools (1973)

problems involves analyzing the relationship between various aspects of crime problems and physical, social, and economic variables.

* The selected site should provide strong support and interest from school decisionmakers. There should be an agreement-in-principle with a local school official (e.g., the superintendent or a board of education member) who is willing and able to be an advocate for the program. In addition, various public or private organizations and agencies should be committed to improvements in the site area.

* Supporting programs should be underway or planned for the target site. These programs could provide funding assistance and expand the scope of CPTED strategies.

* The site selected and the model designed should be amenable to evaluation.

* Lessons learned from the CPTED evaluation should be transferable to other school systems; therefore the site selected should to some extent be typical.

Based upon crime data and the selection criteria, public secondary schools were selected for the demonstration. Both inner-city and suburban sites were considered. Although they had the most severe crime problems, inner-city schools were eliminated primarily because their typically older, two- to three-story construction was deemed less likely to be the model for new construction, and therefore less likely to provide results that could be incorporated in design recommendations. Also, their location in a high-density environment, with its greater number of non-school variables impinging on day-to-day activities, would make the development of a demonstration with even quasi-experimental controls more difficult.

After the choice of suburban high schools had been approved by NILECJ, and after several site visits and other communications, the consortium identified the Broward County, Florida, system as the prime candidate. The site offered several significant advantages. Its pattern of growth was characteristic of similar suburban communities. The Florida Safe Schools Act and the Standard School Facility Construction Act provided opportunities for the widespread replication of successful CPTED strategies. Numerous people on both the State and local level had expressed interest and pledged support for the demonstration effort. In addition, the school system maintained a superior crime reporting system and data base.

THE BROWARD COUNTY SCHOOLS

The Broward County school system has an elected board and a superintendent. It is divided into four geographic areas, each headed by an assistant superintendent and supported by an advisory committee of students and parents who participate in goal-setting and program development. The school system has a Department of Internal Affairs (responsible for security and safety) and numerous other departments and programs that could support the CPTED Schools Demonstration. Its operating budget in 1974-75 was over $162 million.

The schools in the system reflected design features incorporated in most U.S. schools. They were of two types: the open or "tropical" style, consisting of a one-story structure; and the standard two-story structure with double-loaded corridors and internal stairways. Twenty-one new schools were proposed for construction, including three middle and four high schools.

Broward County and Fort Lauderdale, its principal city, were areas of increasing crime, with person-to-person crimes growing faster than the State average and property crimes being the largest contributor to total offenses. Crimes in the schools were well-documented, with recent data computerized. The Internal Affairs department of the school system handled 3,092 incidents in 1974-75, an increase of 77 percent over 1971-72.

Four of the twenty Broward County high schools were selected as demonstration sites on the basis of representativeness, crime severity, and potential cooperation.

Deerfield Beach High School

This school is located in a mixed residential area near the western boundary of the city of Deerfield Beach. The area is composed of lower and lower-middle class families who provide the majority of the high school population. The student body in June 1977 was 1 percent American Indian, 26.1 percent black, 2.9 percent Hispanic, and 70.8 percent white.* Among Broward County high schools, Deerfield Beach ranks sixteenth in percentage of attendance. The number of suspensions in 1976-77 was 388. Total student population was 2,380.

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* In this and later breakdowns, the percentage figures for "black" and "white" students both exclude those of Hispanic ancestry.

As measured by a national standard achievement test, the school's academic standing is below average (-.7 for ninth grade, -.4 for tenth grade, and -.6 for eleventh grade). For the ninth grade, results stayed the same between 1976 and 1977; for the tenth grade, scores were higher in 1977; and for the eleventh grade, scores dropped by .2. The school budget in 1977 was $2,556,153.

South Plantation High School

South Plantation High School is located near the southern border of the city of Plantation. It is bordered on three sides by highways and separated from a residential area on the fourth side by a distance of nearly two city blocks. The student body comes primarily from middle- to upper-class families, and the student achievement level is above average. South Plantation High School reported an enrollment of 2,579 students in June 1977, comprised of .3 percent Asian, 18.9 percent black, 1.4 percent Hispanic, and 79.4 percent white students. Ranking eighth in percentage of attendance among high schools in Broward County, South Plantation has an average daily total of 91.8 percent in attendance, with whites attending slightly more often than blacks. In the 1976-77 school year, 178 students were suspended.

The ninth grade students scored .6 higher than the national averages on standardized achievement tests, while the 10th-graders scored .9 higher and the 11th-graders scored 1.4 higher. Of the four project schools, only South Plantation's averages were above the national average. Ninth and tenth grades dropped slightly in their test scores between 1976 and 1977, while the 11th grade scores remained the same. The budget for South Plantation in 1977 was $2,496,422.

Boyd Anderson High School

Boyd Anderson is located in the city of Lauderdale Lakes. The high school shares its site with a middle school and an elementary school. The main access is through the county property housing the three schools, thereby isolating more than half of the Boyd Anderson High School fron natural surveillance. The side and rear portions of the high school are bordered by mixed residential housing inhabited by lower to lower-middle class families that supply most of its students. The school has a student body of 2,413.

Among all 20 Broward high schools, Boyd Anderson ranks eighteenth in student attendance. Blacks had better attendance records (90.4 percent) than whites (87.9 percent). Boyd Anderson emphasizes curriculum in the basic skills to ninth, tenth,

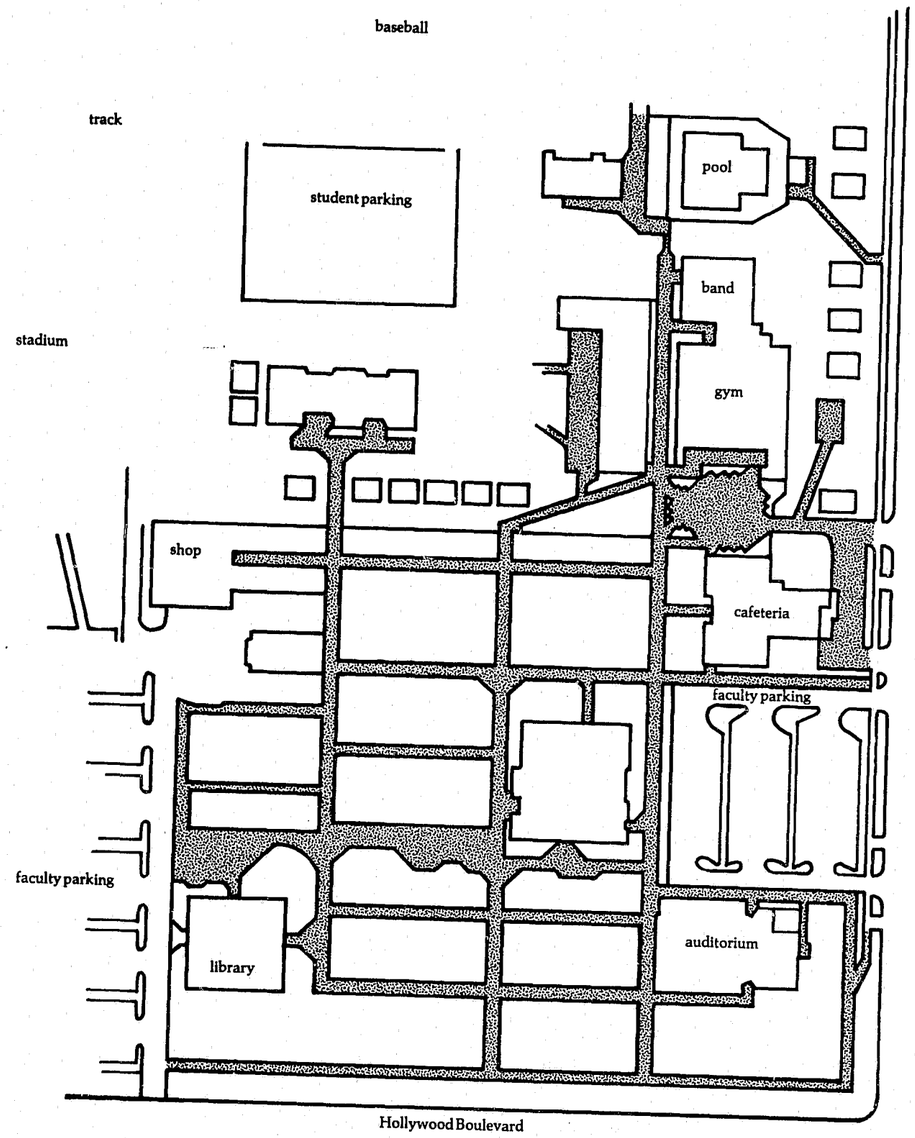


Figure 2. Typical Tropical School Master Site Plan

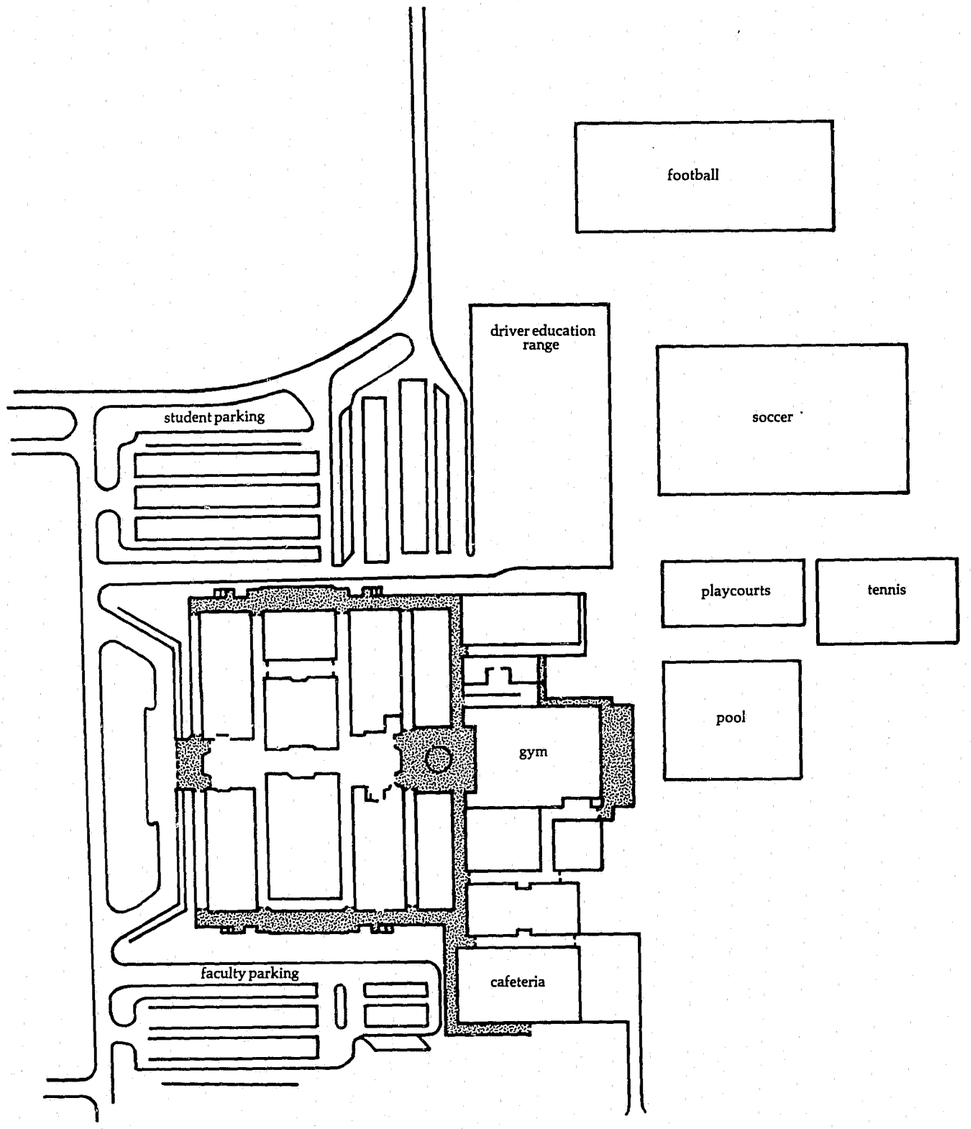


Figure 3. Typical 'New' School Master Site Plan

and eleventh graders, in vocationally and career-oriented programs. The student body is comprised of over 30 percent blacks, a small percentage of other minorities (.8 percent Hispanic, .3 percent Asian), and 68 percent whites. The school's academic standing is slightly below average for the eleventh grade (-.2), drops further for the tenth grade (-.4), and is -.6 below average for the ninth grade. From 1976 to 1977, the test results for ninth and tenth grades dropped, while for the eleventh grade, scores remained the same. In 1977 the budget was $2,394,720.

Boyd Anderson's advisory committee, comprised of parents, teachers, and students, meets with the administration each month to encourage improvement in the relationship between school and community and to support betterment of student rapport.

McArthur High School

McArthur High School is located on the western boundary of the city of Hollywood. The twenty-five-year-old structure is surrounded by residential areas on three sides and a commercial strip on the fourth. The majority of students at McArthur come from middle-class homes within the immediate vicinity of the school. There has been a large growth in the student population since the facility was constructed.

The 2,453-person student body is comprised of 3 percent Asians, 11.2 percent blacks, 3.3 percent Hispanics, and 85.2 percent whites. McArthur ranks second in the county in percentage of attendance among high schools, with whites attending slightly less than blacks. McArthur's administration credits their attendance project, initiated in 1975, with the success of their ranking status. Grade 11 scored .5 less than the national average on grade scores, grade 10 scored .1 less, and grade 9 scored .3 less. The budget in 1977 was $2,683,456.

In summary, each of the four project schools is attended by over 2,300 students and has a high percentage in attendance (91.32 percent average). Whites comprise the greatest percentage of students (76 percent average), and achievement test averages are slightly lower than the national average for Boyd Anderson, Deerfield Beach, and McArthur, but slightly higher for South Plantation.

PROJECT INITIATION PHASE

The project initiation phase of the Broward County demonstration was concerned with assessing crime-related problems and issues; developing a concept plan; and assessing potential resources, support programs, and personnel. The initiation phase got underway in September 1974.

ASSESSMENT OF CRIME-RELATED PROBLEMS AND ISSUES

The Internal Affairs Division of the Broward County School System is responsible for handling crimes within the school system. During the four academic years from July 1971 to June 1975, the number of security matters was 1,750, 1,960, 1,922, and 3,092 respectively. The total dollar loss attributed to vandalism for these years exceeded $250,000, thefts exceeded $450,000, and dollar loss from arson or suspected arson was approximately $340,000.

Data for one academic year (1974-75) were examined to determine the school system's overall experience regarding CPTED-related offenses. Table 4 compares reported offenses for 1973-74 and 1974-75 regarding vandalism, breaking and entering, thefts, assaults, and extortion. Substantial increases occurred in all categories. Approximately 800 of these incidents were further examined to identify their sub-environmental locations, in order to facilitate the development of a CPTED plan for the demonstration schools.

* Vandalism. Most vandalism occurred on school grounds, but no precise information is available as to which portion of the grounds was vandalized. The most costly vandalism occurred in multiple rooms (possibly associated with theft or breaking and entering), cafeterias, and classrooms. It is possible that much of the exterior vandalism was unintentional or non-malicious property damage, but the data was not available to verify this hypothesis. Nevertheless, visual examination of external areas of the selected demonstration sites provided insights

Offenses	1973-74	1974-75	Increase
Vandalism	110	183	66.4%
Breaking and Entering	111	318	186.5%
Thefts	499	740	48.3%
Assaults	323	484	49.8%
Extortion	39	51	30.8%
Totals	1,082	1,776	64.1%

4 - CPTED-Related Offenses for School System

(Reported by Internal Affairs)

on the areas susceptible to various kinds of vandalism or property abuse.

* Breaking and entering. Lockers, multiple rooms, and cafeterias were the most frequent targets for breaking and entering offenders. Parking lots and the school grounds were also victimized frequently. Many of these locations contain high-value personal property (such as stereo tape decks in cars) or school property (such as cafeteria machinery) which can be easily removed and either fenced or used by the offenders. The cafeteria also contains large quantities of food which can also be easily removed. Although most of the target areas are within the internal portion of the school complex, entry often must be gained through windows and doors of the main complex.

* Theft of personal property. High school parking lots were frequent targets for theft of personal property. Stereo equipment, radios, tires, and other automobile accessories, as well as bicycles, were prime targets. Within the school building, most thefts occurred in the classrooms and the locker areas. Items usually taken were purses and wallets or personal items such as clothing. There appeared to be a close relationship between sub-environments for both larceny and burglary, suggesting that for preventive measures the two offenses could be handled in similar fashion.

* Theft of school property. A trend similar to breaking and entering can be observed in thefts of school property.

Again, most incidents occurred in high-value equipment areas, particularly in such locations as the audio-visual and the music rooms, where camera, speaker equipment, and band instruments were taken.

* Assaults. Assaults occurred most frequently at points of student congregation. Parking lots, classrooms, corridors, and school grounds (usually bus loading areas and athletic areas) were prime locations. The majority of assaults were student-student types. Frequently, these assaults were classified as "disturbances" severely disruptive to the routine of the school. At these times, groups of students preempted an area, taking it over and instilling fear in passersby through verbal or physical assault.

* Other crimes. In addition to the selected index crimes, several other types of incidents received attention because they seemed either to have an impact on index crimes or to exacerbate the fear problem in the schools. One such problem was trespassing since, according to school officials, individuals from outside the school sometimes helped to instigate disturbances and also may have been involved in on-campus drug traffic and other offenses. The second problem, extortion, while not comprising a large number of incidents, created a fear-producing situation. It was intended that strategies designed to address the major selected crimes also would alleviate these other types of incidents.

The analysis of environmental location of selected crimes revealed such a strong pattern for thefts and burglaries that additional analysis was undertaken to determine points of entry and type and value of stolen property. Case records from each of the high-incident schools were analyzed to determine these factors. In the majority of breaking and entering offenses in the examined schools, entry was gained through windows or doors (see table 5). Jalousies, plastic roof domes, and louvers on doors were removed to gain entry. Although the data were limited, they suggested that the exterior of the school buildings should be target-hardened.

Analysis of the equipment stolen during larceny and breaking and entering incidents indicated a strong pattern toward loose, high-value equipment that could easily be fenced or used at home. The classrooms that were frequent targets generally housed this type of equipment. The following list shows items that frequently were stolen during school crimes against property.

. Cafeteria equipment (meat slicers, etc.)

. Adding machines and calculators

. Typewriters

. Athletic equipment

. Industrial equipment (tools)

. Media equipment (viewers, headsets)

. Cassette equipment, tape recorders

. Science equipment

. Home economics equipment (microwave oven, coffee pots, etc.)

. Portable televisions

. Bicycles

. Stereo equipment (from automobiles)

. Cameras

Entry Point	Number of Incidents	% of Total Sample
Roof (plastic domes)	2	3.77
Doors	21	39.63
Windows	16	30.19
Jalousies	5	9.43
Louvers on Doors	3	5.66
Transoms	1	1.89
Other	5	9.43
	53	100.00

5 - Sample Points of Entry

This preliminary analysis suggested that six sub-

environments should be the focus of the demonstration's efforts: the school grounds, where the crime problems were assault, bicycle thefts, breaking and entering, and vandalism; the parking lot, where assaults, breaking and entering, thefts, and vandalism occurred; the locker room for breaking and entering and theft; the primary corridor for assaults; the restroom for assault and extortion; and the classroom for the problems of assault and theft.

THE CONCEPT PLAN

The basis for the school demonstration was the concept that the proper design and effective use of the physical environment could produce behavior which reduced crime and fear, thereby improving the quality of life and the educational experience in school. On the one hand, this would be done by providing activities and amenities which would increase the students' identification with the school and selected areas in it; the assumption was that this enhanced territorial identification would lead the students to defend the school against intruders and internal disturbances. On the other hand, the changes were intended to increase perceived risk on the part of potential offenders (whether outsiders or students) that the CPTED school was not a good target environment.

The educational function of schools and the attitude of the Broward County students, faculty, and community were generally opposed to traditional target-hardening mechanisms for crime prevention (e.g., gates, locks, and fences). Only in the last resort were such fortress-like mechanisms to be utilized. Rather, the thrust was to be an open, natural environment in which casual surveillance, enhanced activities, and improved motivation would provide the principal deterrents to crime.

The approach to the perimeter of the building and grounds was somewhat different. Here the emphasis would have to be more on perimeter control through target hardening and other tactics that would increase the difficulty and risk to offenders.

PROPOSED PARTICIPANTS AND FUNDING

The school environment, particularly that of Broward County, contains a diverse group of knowledgeable individuals. Accordingly, it was recommended that most of the CPTED plan be implemented by the county school system, with minimal assistance from other local agencies.

The process of identifying potential funding sources began at the start of the program, when contacts were made with public interest groups and professional organizations, and research was done into state and federal acts and programs that might provide funding. When the school demonstration was narrowed to Broward County, more precise funding sources could be investigated. This type of investigation was expected to be an ongoing process, since funding is responsive to economic activity at all levels of government.

PROJECT PLANNING

The project planning phase involved an in-depth crime-environment analysis, the development of a strategic plan specifying the exact tactics to be employed in the demonstration, and specification of the management and work plans for implementing the program.

CRIME-ENVIRONMENT ANALYSIS

In the initiation phase, the crime pattern for all Broward County high schools was analyzed, and sub-environmental targets which the demonstration would focus on were identified. In the planning phase, a more detailed analysis of the crime pattern was conducted in the demonstration schools. It was expected that the schools would differ in their crime patterns and that, consequently, the CPTED program would vary from one school to another. Nevertheless, sub-environments exhibiting the same problems would be expected to receive the same treatment.

For the crime-environment analysis conducted in this phase, records were used for the period July 1973 to June 1975. In addition, interviews were conducted with school officials and students to assess unreported victimization, and the fear and concern over crime. The conclusions are reported below.

Boyd Anderson High School

Boyd Anderson had experienced many crime problems, primarily assault, extortion, and vandalism. For the two years, the school accounted for 71 percent and 63 percent of the assaults occurring in the four schools. These assaults occurred primarily on school grounds, in corridors, and in classrooms. Boyd Anderson also had the highest rate of extortion.

Severe racial disturbances were experienced when

bussing was implemented, but this problem subsided with the coming of a new school administrator. Although the new administration was strongly supervision-oriented, and had instituted many changes to increase school spirit and cohesiveness, the facility still reflected physical design impediments that supported the occurrence of criminal incidents.

Despite the control and supervision established by the new school administration, there was still considerable concern expressed by teachers and students for the problems of assault and the fear of assault on school grounds, parking lots, exterior stairwells, and corridors. Thefts were high in the parking lots, locker rooms, and classrooms. Vandalism was also a classroom problem.

Deerfield Beach High School

Deerfield's most serious crime problems were theft and breaking and entering. The great majority of these crimes occurred in the automobile parking lot. Interviews with school officials and students indicated that the theft problem was greater than officially reported, because a large number of petty thefts went unreported. These occurred primarily in the physical education locker area.

There was a lower incidence of assault, extortion, and vandalism in Deerfield than in the other demonstration schools. The fear of assault in exterior stairwells, and trespassing to sell drugs or to vandalize the school grounds, were of concern to school officials and students. An examination of vandalism reporting procedures revealed that this offense also occurred more frequently than was officially reported.

McArthur High School

McArthur had a moderately high crime rate. One of the major contributing factors was the size and design of the site. McArthur covered nearly 40 acres of land, and the buildings sprawled over much of this area. The old "tropical" design was similar to a maze with many isolated and blind areas.

McArthur's main problem areas were the parking lots, school grounds, classrooms, and corridors. Theft and assaults were the most prevalent problems in these areas. Additionally, from interviews with school officials, it was clear that major concern existed regarding fear of assault in the restrooms.

The administration at McArthur attempted to overcome some of the design problems by establishing a zone system where selected teachers would coordinate the handling of problems. Student patio areas were moved to areas with some natural

surveillance, and the school resource staff would take turns watching the parking lots during lunch. However, the design problems and distances were impossible to overcome in most situations.

South Plantation High School

South Plantation had a moderately high crime rate, with the most significant crimes being assaults, thefts of personal property (including bicycles), breaking and entering, and vandalism. Students and administrators indicated a great concern for supervision problems. The administration pinpointed the problems of cutting classes, overcrowding, and poor building design as the causes of their supervision problems.

Students and faculty stated that student involvement and morale were increasing and that their contact and rapport with the administration was strong. Students were receiving excellent services from the guidance and counseling staff.

Careful reviews of the offense records, school interviews, and maintenance reports showed that vandalism and petty theft were probably much higher than officially reported. The low clearance rates and relatively low cost per offense for petty thefts and vandalisms probably affected reporting and coding decisions. Half the reported vandalisms were coincident with breaking and entering or theft, with the remainder being high-value property damage. However, a sample site survey indicated many locations that sustained vandalisms, most of them in isolated or unsurveillable areas.

STRATEGIC PLAN

In finalizing the school demonstration plan, the characteristics of the school environment in Broward County were reexamined. These characteristics included the needs of students, faculty, and other users of the school environment; the normal and expected role of the school within a specific neighborhood; and the behavior of users and offenders, based on observations, interviews, and other available data.

The reexamination of the schools focused on the numerous opportunities for natural surveillance and access control, with activity support and motivational reinforcement strategies playing important roles as well. Specific strategies were developed for each sub-environment. These strategies were to be implemented in those demonstration schools where crime was a problem in that particular sub-environment. The crime problems and strategies are listed by sub-environment in tables 6-11.

Crime-Environment Problems	CPTED Strategies
Design requirements for classrooms produce isolation of individual classes, resulting in high student to teacher ratios and little external natural surveillance (real or perceived) when class is in session. Assaults occur. (Thefts occur when class is empty.)	Remove obstacles to natural surveillance to increase risk of detection and to reduce perception of isolation.
	Overcome distance and isolation by improving communications to create rapid response to problems, the perception of rapid response, and more effective surveillance.
Location and design definition of multiple-purpose classrooms produces unclear transitional zones, decreases territorial concern, and decreases natural surveillance. Thefts occur.	Extend the identity of surrounding spaces to multiple-purpose space to increase territorial concern and natural surveillance.
	Provide a functional activity in problem areas to increase territorial concern and natural surveillance.
Class shift procedures during lunch hour produce unclear time transition and definition of groups; decrease control and increase student to teacher ratio (many classroom thefts are committed by classcutters).	Revise class scheduling and movement procedures to define time for class shifts making surveillance and supervision of classcutters easier.

6 - Classroom Problems and Strategies

Crime-Environment Problems	CPTED Strategies
Location of restrooms near external entrances and exits isolates them from normal school hour traffic flow and prohibits surveillance. Assaults occur.	Limit access to isolated areas during specific times for access control and to reduce the need for surveillance.
Privacy and isolation required for internal design provides blind spots that reduce surveillability on the part of students and supervisory personnel, i.e., exterior door and anteroom wall. Assaults occur.	Remove obstacles to natural surveillance to decrease fear, increase use, and increase risk of detection.

7 - Restroom Problems and Strategies

Crime-Environment Problems	CPTED Strategies
Design and use of lockers (by multiple assignment) disperses students throughout area, reduces surveillance and increases territory for teacher supervision. B&E and theft occur.	Redesignate use of space to increase territorial concern, to increase the defined purpose of space, and reduce area requiring surveillance.
Similar design of lockers creates confusion and decreases natural surveillance by creating unclear definition of transitional zones. B&E and theft occur.	Provide clear definition of transitional zones and use of space for easy recognition of bonafide users.
Isolation of locker area while class is in gymnasium or on playing field eliminates natural surveillance. B&E and thefts occur.	Provide functional activities in problem areas to increase natural surveillance.

8 - Locker Room Problems and Strategies

Crime-Environment Problems	CPTED Strategies
Design and use of corridors provide blind spots and isolated areas that prohibit natural surveillance. Assaults, threats and extortions occur.	Provide functional activities (or redesignate use) in blind spots or isolated areas to increase natural surveillance (or the perception thereof).
	Remove obstacles to natural surveillance (increase perception of openness).
Class scheduling promotes congestion in certain areas at shift changing that decreases supervision capabilities and produces inconvenience. Assaults and confrontations occur.	Revise class scheduling and management procedures to avoid congestion, to decrease supervision ratio, and to define time transitions.
Location of benches and other amenities in corridors creates misused space and congestion. Corridor locations are lacking in natural surveillance because of design. Assaults and confrontations occur.	Relocate informal gathering areas to areas with natural surveillance and that are designed to support that activity.
Location and use of corridors for functions other than pedestrian passage such as smoking zones promotes preemption of space by groups and unsurveillable misused space. This misused space supports behavior that attracts outsiders to the external corridors designated as smoking areas. Assaults, confrontations and other illegal activity occur.	Relocate activities and functions from misused space to areas designed to support these activities and to provide natural surveillance.
Design and definition of corridor areas do not support a clear definition of the dominant function of that space (i.e., passage). Unclear transitional zones produce behaviors conducive to assault and confrontation.	Provide clear definition of the dominant function (and intended use of space) and clearly define transitional zones to increase territorial concerns and natural surveillance.

9 - Corridor Problems and Strategies

Crime-Environment Problems	CPTED Strategies
Design of and procedures for bus loading areas prohibit teacher surveillance, increase supervision ratio, impede pedestrian traffic flow, and cause congestion. Confrontations, thefts, and vandalisms occur.	Redesign bus loading zone and revise procedures to increase natural surveillance, control pedestrian flow, and decrease ratio of students to supervisors.
Location of informal gathering areas (natural and designated) promotes the preemption of space, interferes with traffic flow, and prohibits natural surveillance. Assaults occur.	Relocate informal gathering areas near supervision or natural surveillance.
	Redesign informal gathering areas to promote orderly flow and breakup the preemption of space by groups.
Design, use, and location of facilities has created isolated and blind spot areas that are difficult to survey (due to design and/or nonuse because of fear or avoidance). Assaults, thefts, and vandalism occur.	Provide functional activities in unused or misused problem areas to promote natural surveillance, increase safe traffic flow, and attract different type of users.
Design and border definition of campus creates unclear transitional zone definition. B & E, theft, and vandalism occur.	Provide clear border definition of transitional zones for access control and surveillance.
Location and positioning of school physical plant prohibit natural surveillance (off hours) by local residents and passersby. B & E, theft, and vandalism occur. (One half of vandalisms are incident with B & E).	Provide functional community activities on school campus (off hours) to increase surveillance through effective use of facilities.
	Overcome distance and isolation by improving communications to create rapid response to problems (and its perception) and more effective surveillance.
Design, use, and location of bicycle compounds or parking areas on school grounds prohibit natural surveillance and limit proper use because of students with variable hours. Thefts of bicycles occur.	Redesign bicycle parking areas to provide levels of security consistent with variable access needs of students.

10 - School Grounds Problems and Strategies

Crime-Environment Problems	CPTED Strategies
Location and design of student parking near bus-loading areas without restricting borders promotes unmanaged pedestrian use of parking areas, promotes preemption of space by groups, and prohibits natural surveillance. Assaults, B & E, thefts, and vandalism occur (affected by bus-loading procedures).	Relocate and/or redesign bus-loading and parking lot access procedures to reduce necessity for pedestrian use of lot, reduce congestion in transitional zones, and support strict definition of parking lot use.
Design and location of parking lots provide unclear definition of transitional zones and unmanaged access by vehicles and pedestrians, students, and nonstudents. B & E, thefts, and vandalisms occur. (Trespassing also).	Provide natural border definition and limit access to vehicular traffic in student parking to clearly define transitional zones, to reroute ingress and egress during specified periods, and to provide natural surveillance.
Location of informal gathering areas designated as smoking zones in open corridors adjacent to parking lots and visible from public thoroughfares prohibits natural surveillance, attracts outsiders, and is an impediment to school policies restricting student use of parking lots during school hours. B & E, thefts, and vandalism occur.	Relocate informal gathering areas to places with natural surveillance that are isolated from the view of public thoroughfares and designed to support informal gathering activities.
Isolation of student parking lots (some locations) prohibits any natural surveillance. Variable student hours limit use of fencing and gates. B & E, thefts, and vandalism occur.	Relocate student parking (or part of) to areas with natural surveillance and/or relocate safe activities in juxtaposition with student parking to increase natural surveillance.
	Redesign parking lots to provide levels of security consistent with variable access needs of students.

11 - Parking Lot Problems and Strategies

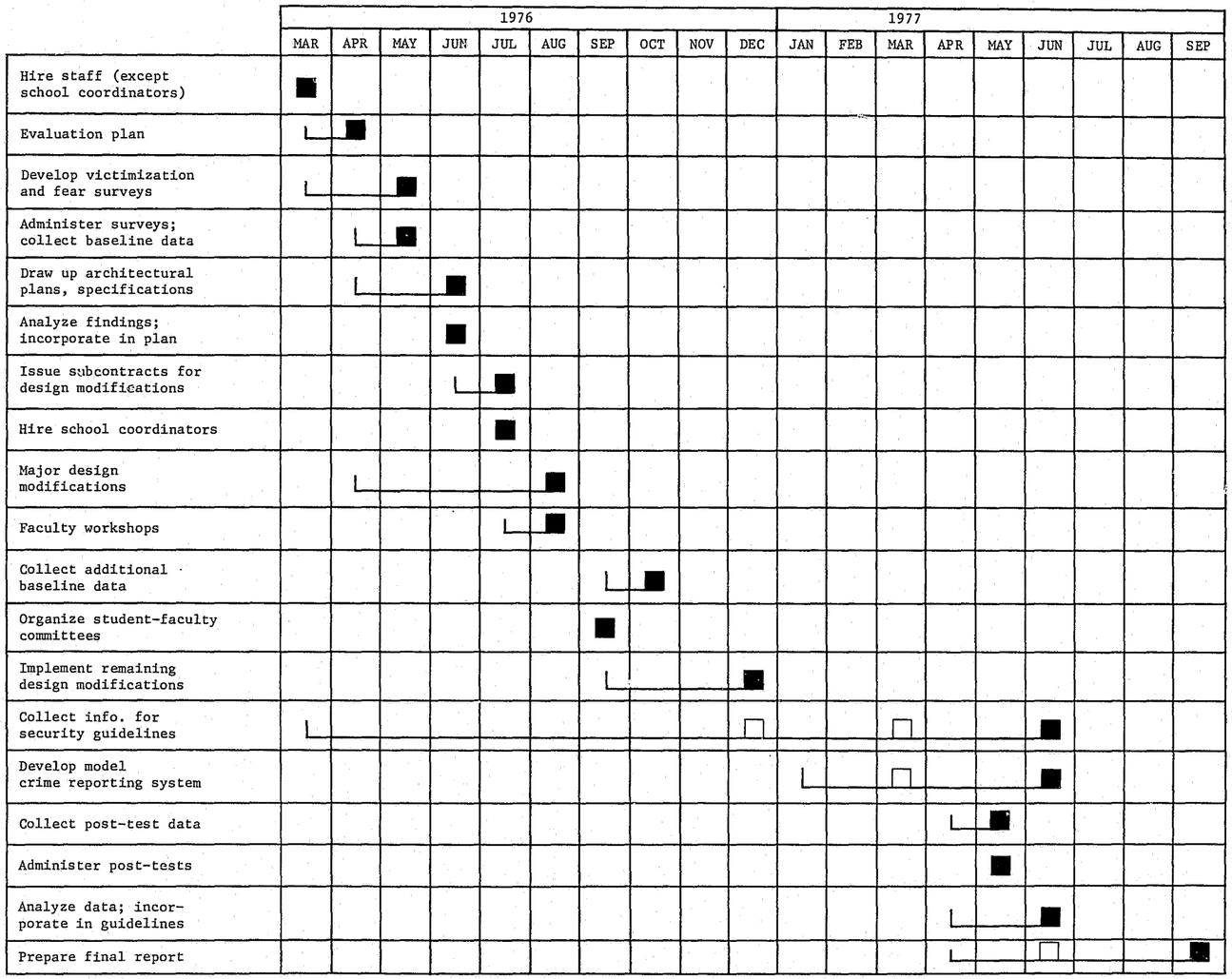
MANAGEMENT AND WORK PLANS

Approval of the preliminary plan by the Broward County School Board, and their agreement to share costs through manpower and fiscal resources, led to a more intense effort to identify funding sources. Initial contacts were established with representatives of the Broward County Metropolican Planning Unit, the Florida Bureau of Criminal Justice Planning and Assistance, the State Department of Education and Administration, and the Office of the Lieutenant Governor. However, circumstances prevented State-level financial support from being committed during fiscal year 1975. Broward County's proposal occurred late in the planning cycle, and the magnitude of the request ($400,000) made it virtually impossible to divert funds from any of the previously committed projects. As a result, the decision was made to seek other funding sources.

In January 1976, an application was submitted to the Broward County Criminal Justice Planning Council; the regional LEAA office in Atlanta, Georgia; the Florida Department of Education; and the Broward County School Board. The LEAA request totalled $397,105, and $9,000 and $35,000 were requested from the State Department of Education and the County School Board, respectively. In February, the Department of Education endorsed the application and committed its portion of the requested funds. In March, the School Board committed its share. In June, a slightly revised version of the grant request was submitted to the Broward County Criminal Justice Planning Council; the application was forwarded to the LEAA Regional Office, and funds were awarded in July 1976.

Analysis indicated that the demonstration required a dedicated staff to carry it out. As for the evaluation, it seemed desirable that it be performed by employees of the Broward County School System, to save money and to utilize the talents and experience of professionals in the school system's Office of Research. (Many of the data collection instruments and methods were already in operation as part of the ongoing efforts of that office.) Therefore, the Broward County Schools Demonstration was to be conducted primarily by school system personnel. Overall responsibility for implementing the plan was assigned to a project director. Since this individual was also director of the Office of Internal Affairs, he could provide progress reports directly to the Superintendent of Schools. A project coordinator assisted him, and each of the four high schools had a local coordinator responsible for implementing strategy at that school. The CPTED consortium provided technical and managerial assistance through an on-site representative; in addition, the consortium supported the evaluation activities and helped seek funds for implementation. The work plan developed for the demonstration is shown in table 12.

12 - SCHOOL DEMONSTRATION TASK SCHEDULE



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PROJECT IMPLEMENTATION

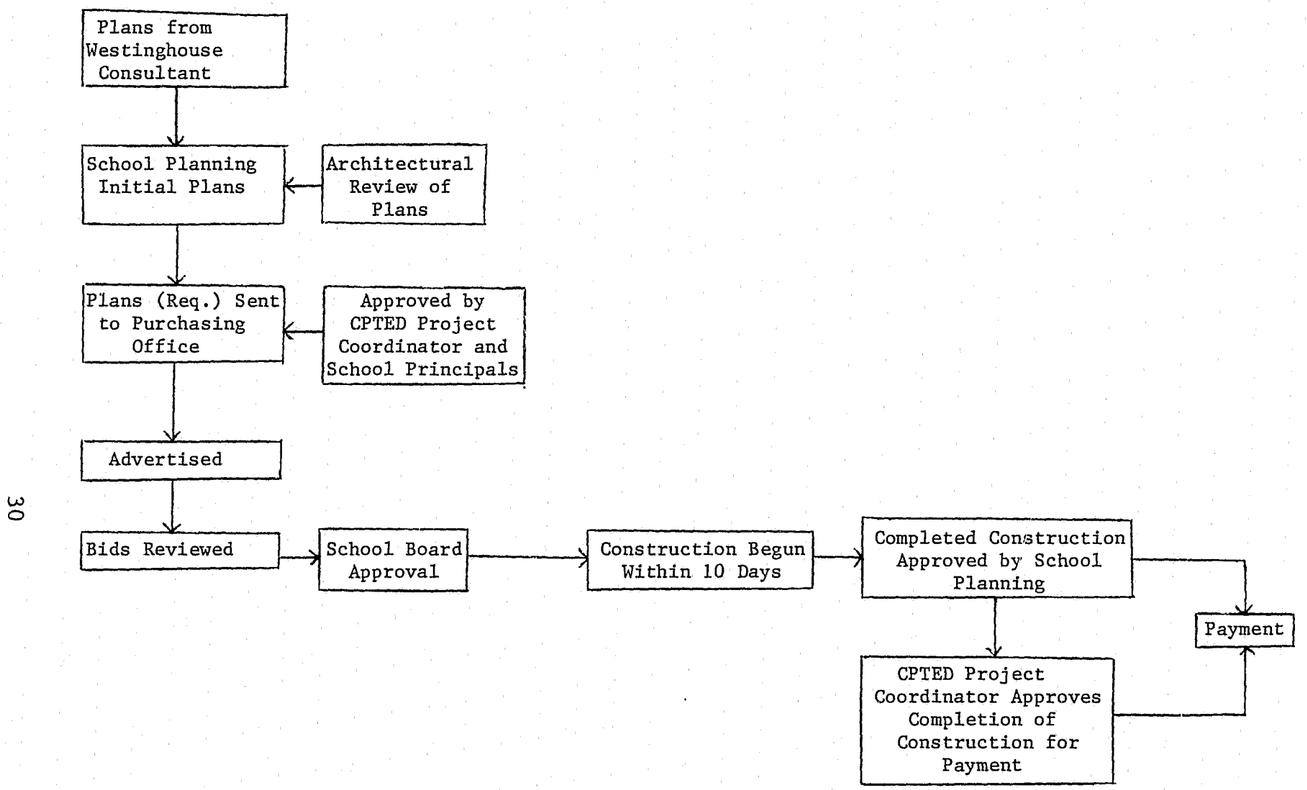
In theory, the method by which CPTED strategies become implemented in a school system is straightforward. This procedure is outlined in figure 13, using the mini-plazas for illustration. The School Planning Division draws up a set of plans (for the mini-plazas, an original plan was submitted by Westinghouse) which are structurally sound and which comply with city, State, and national building codes. A State-approved architect assures the soundness of the plans; they are approved by the CPTED project coordinator and the school principals; and a bid proposal is prepared and sent to the Purchasing Department for advertising.

Designated School Planning Division personnel then review the bids and recommend to the School Board that the lowest acceptable bid be awarded. When the board accepts a particular bid, School Planning Division oversees construction, which is required to start within ten days after award of the contract.

Following is a description of this procedure as it applied to the implementation of the specific design tactics:

Courtyard Renovations

The directives for the courtyards were to create a mini-plaza in the interior courtyard area, and to organize a student-faculty committee to assist designing and coordinating mini-plaza activities. The courtyard was to begin in November 1976 and to be completed by January 31, 1977. Designs for Deerfield Beach and South Plantation went from School Planning to the CPTED Project Coordinator for his approval on November 20, 1976. On December 15, the principal of Boyd Anderson rejected the plans for his school; new blueprints for Boyd Anderson's courtyard renovations were received on December 17. On December 15 and December 28, for the other three schools, the CPTED Project Coordinator asked that work begin on the plans, and gave his approval.



13 - Mini-Plaza Construction Process

On April 12, 1977, the bids for the mini-plazas at all four schools were received. Boyd Anderson requested and was granted exclusion from the mini-plaza plans; they wanted to complete their mini-plaza on their own, without the assistance of the contractor, using some CPTED project funds. For the other three schools, bids were awarded on April 21. Construction began soon afterwards, with the purchase order going out on May 4.

Approximately half the time from the start of the grant to the completion of the courtyards was spent in planning. There was relatively little time spent in advertising and receiving the bids: except for Boyd Anderson, bids were awarded and purchase orders were issued very rapidly. The actual construction time for the three completed sites was approximately eight and one-half months.

Special attention should be drawn to the renovation at Boyd Anderson. As of March 15, 1978, the Boyd Anderson courtyard had not been totally completed. In addition, the time taken to issue a purchase order for Boyd Anderson was almost ten times that taken for the other three schools. These delays were caused by a variety of factors, but primarily they can be attributed to funding problems and the principal's insistence that Boyd Anderson's courtyard be developed to his specifications, utilizing student labor. This was the only school in which students actively participated in the planning and building of the courtyard.

In summary, meeting the procedural requirements for developing approved plans took most of the time in implementing the courtyard strategy. Processing the plans, once they left the School Planning Division offices, was accomplished in two months. Overall, it took approximately the same amount of time to complete the construction as it did to issue a requisition. Except for Boyd Anderson, student participation in planning and implementing courtyards was minimal.

Bicycle Parking Compounds

To be implemented in all schools except Boyd Anderson, the bicycle parking compounds were originally designed for use with bike locking cups. However, in December 1976, School Planning rejected the plans for the cups; racks would be used in their place.

Requisitions for the three bike compounds were issued in February of 1977, approximately eight months after the grant was funded. It then took approximately three months to award the bid. While there were some problems -- e.g., drainage problems at McArthur High School -- construction activities consisted

primarily of some paving, installing a fence, and installing and anchoring a bicycle rack, which took approximately six months to complete (from April 1977 through October 1977). As in the courtyards, half the time spent on this strategy was in developing and issuing the requisition.

Hallways and Exterior Stairwells

A variety of strategies were to be employed inside the school buildings. The planning for these strategies took from six to eight months; the actual implementation, two to three months.

At Boyd Anderson, the original plans included installing a window in the corridor wall adjoining the custodian's office (never implemented) and placing multi-colored graphic designs in corridors to define their intended functions. Based on initial renderings by a Westinghouse architect, the actual work would be done by students under the supervision of the art instructor. By November 1977 -- eighteen months after the start of the grant -- the "supergraphics" were considered complete.

At South Plantation, the mock-up and mount for a Paladin (the school symbol), to be placed between the snack bar and the patio, was completed by the end of January 1977. Another tactic originally called for a teacher planning area in a corridor location where it would facilitate natural surveillance. However, when it became clear that teachers would not want to use such an area, the plans were changed to the construction of a security office under a staircase in the main school corridor. The security office was one of the few construction projects to be completed over the summer vacation. Two other South Plantation corridor tactics were delayed by unanticipated problems: at the request of the contractor, the reconstruction of the cafeteria corridor was rescheduled until the mini-plaza was finished; a corridor door-and-wall addition was postponed because of repairs necessitated by four separate incidents of student vandalism.

Exterior stairwell alterations were planned for all schools except McArthur. The tactic to install windows in all exterior stairwells was rejected as unsound by the structural engineer; the tactic to install gates to close off hidden areas underneath the exterior stairwells was ruled out as a potential fire hazard. The plan was modified so that the areas would be completely sealed off. Work was completed at South Plantation in February 1977; at Boyd Anderson in April; and at Deerfield Beach in May.

Restrooms

Restroom renovations were unique to McArthur High School. The plan originally called for the removal of doors and their replacement by gates; this plan was rejected by the Internal Affairs Office. From a security standpoint, it was preferred to leave the doors on so that they could be locked in an open position during school hours and closed and locked during non-school hours, reducing their susceptibility to vandalism. In addition, State law prohibits doorless restrooms near food services areas, as would have been the case in South Plantation. Sixty-three percent of the restroom modifications were completed as planned within three months of issuing the requisitions.

Parking Lots

The parking lot changes were plagued with difficulties. At Deerfield Beach and South Plantation, the polegates were not installed precisely so that they would lock with the hardware that had been ordered. At McArthur, neither the principal nor the students supported the idea of a transitional safety fence, designed to create a one-way zone; this necessitated the removal of a major part of the fence and the discontinuation of the secure parking lot.

At Boyd Anderson, the student parking lot was to have been exchanged with the driver education parking lot, to achieve greater surveillance. The principal of the school did not think this was a good idea; thus, the tactic was not implemented. Instead, the entire student lot was fenced and provided with appropriate gates. Primarily because of cost overruns in other areas, a plan for providing special parking lots was never implemented.

School Grounds

Several different tactics were implemented to improve grounds security. These included establishing a mini-police precinct at one school, constructing portable snack bars, changing bus loading zones, landscaping, improving communications with remote locations in and around the school, and installing burglar alarms.

Boyd Anderson was the only school to receive funds for the development of a school police precinct. Final drawings were sent to CPTED on September 10, 1976. The job was completed by March 24, 1977, but because the local police department was being merged with the County Sheriff's Office, occupancy did not occur until several months later. Ultimately, a truancy

specialist and a police specialist from the Youth Services Division were given space in the precinct.

A bus loading zone tactic was also implemented at Boyd Anderson only. This job was to be done completely by School Planning, with directional signs provided by the Maintenance Department. By September 1976, the bus loading zone policy was implemented but signs were still not delivered as of March 10, 1978.

Portable ticket booths were constructed at McArthur and South Plantation. The requisition went out on November 15, 1976, and the job was completed by the end of December. Also implemented at McArthur was a project conducted by the Office of Internal Affairs for improving communications with remote areas of the school through the use of two-way radios. A requisition was sent out on June 7, 1976, and the work was completed by August 26.

Border definition was a tactic implemented only at South Plantation and Deerfield Beach. School Planning received the plans from their landscaping group in January 1977, but because the cost escalation of the courtyard had priority, the requisition was not sent out until September 8 for Deerfield Beach and September 23 for South Plantation. The job was completed at Deerfield Beach on September 26; the contractor submitted his invoice for work completed at South Plantation on October 11.

A final tactic to improve grounds security was installing burglar alarms at South Plantation, McArthur, and Boyd Anderson. On May 20, 1976, the School Board approved the plans for the alarms; in January 1977, installation was completed.

Locker Rooms

Originally planned for Deerfield Beach, South Plantation, and Boyd Anderson, only Boyd Anderson received funding for locker room color-coding, and that was only for the boys' locker room. Had implementation occurred at all three schools, the budget would have been exceeded by 1,500 percent. This cost escalation was caused in part by repeated delays in plan approval. Once approved, however, the project was implemented fairly efficiently, falling less than one month behind its scheduled completion date of January 1977.

It should be noted that locker rooms were not painted in the fashion envisioned by the planners. Instead of painting different sections in different colors, the lockers were painted by rows -- that is, in a single column, the top locker was painted one color, the second one a different color, and so on--

with an identifying color for each of six class periods. Athletic Department personnel felt that this was the best way to obtain increased surveillance opportunities without creating congestion.

Educational Tactics

There were no systematic attempts to educate the students about CPTED during the first eighteen months of the project. There were some isolated student newspaper articles about the project, but from pre-test survey data, this did not raise the level of student awareness. On November 12, 1977, a morning workshop was held with approximately ten teachers from each of the four project schools. This workshop presented an overview of CPTED, explained how the various tactics were related to the construction, and suggested that the faculty and students of each school consider curricula units, essay or poster contests, or other avenues to involve the student body in CPTED efforts. A luncheon for student organization leaders from each of the project schools was held on December 6, 1977. The purpose was to inform student leaders about the CPTED projects. In the fall of 1976, the advisory committee at South Plantation, and the faculty and administration of Boyd Anderson, each received a formal CPTED presentation. In February 1978, Deerfield Beach requested and received a similar presentation.

In an attempt to educate and inform greater numbers of students, handouts describing the CPTED project and highlighting the importance of student involvement were delivered to each school during the first week of February 1978.

COST ANALYSIS

Table 14 provides a breakdown of the costs under the LEAA Discretionary Grant to Broward County, through early April 1978. It is clear that the major expenses were the auto parking lots, the courtyard construction and renovation, the school policing precinct, the evaluation, and administration. Most tactics consumed less than 1 percent of the total project costs. That is, each tactic cost well under $4,400. Other tactics, such as the "supergraphics" and the radios, each accounted for approximately 2 percent of the total cost. The bicycle parking compounds in the three schools accounted for 4 percent of costs, while the evaluation expenses accounted for approximately 4 percent of total project costs. The most expensive elements of the strategies utilized in the CPTED project were the auto parking lot and the school policing precinct, each accounting for 8 percent; and the courtyard, which accounted for 26 percent of the total. Administration proved

to be the most expensive item: 43 percent of the cost of the project. This cost did not take into account the time allocated by the Broward County Research Department, a school architect, and a facilities planner; the costs of these additional persons were estimated in the grant to be an additional $46,440.

As noted earlier, the project suffered from cost overruns in the construction of some of the major items. For example, the courtyards were estimated to cost $82,488; in actuality, they cost $114,956. Similarly, the policing precinct was estimated to cost $18,000 and actually cost $34,654. Some of the other plans had to be modified to absorb these unanticipated costs.

	BOYD ANDERSON	DEERFIELD BEACH	MCARTHUR	SOUTH PLANTATION	TOTAL
Auto Parking Lot	$ 6,448	$10,032	$ 6,857	$12,437	$ 35,774
Bicycle Parking Compound	____	3,958	4,833	3,958	12,749
Courtyard	14,402	40,763	25,828	33,963	114,956
Exterior Stairwells	650	975	____	650	2,275
Alarm System	1,215	____	1,239	1,255	3,709
Supergraphics	9,077	____	____	250	9,327
Snack Bar	____	____	____	2,360	2,360
Locker Rooms	2,529	____	____	____	2,529
School Policing Precinct	34,664	____	____	____	34,664
Border Definition	____	1,560	____	____	1,560
Corridor Windows	____	____	1,650	____	1,650
Restrooms	____	____	1,190	____	1,190
Ticket Booths	____	____	1,978	____	1,978
Radios	____	____	7,300	____	7,300
Security Office	____	____	____	3,950	3,950
Corridor Walls	____	____	____	790	790
TOTAL	$68,985	$57,288	$50,875	$60,602	$237,750
Anticipated additional costs through end of contract					2,335
TOTAL CONSTRUCTION COSTS					240,085
Evaluation Costs					15,400
Estimated Administrative Costs					188,515
TOTAL PROJECT COSTS					$444,000

14 - Project Costs

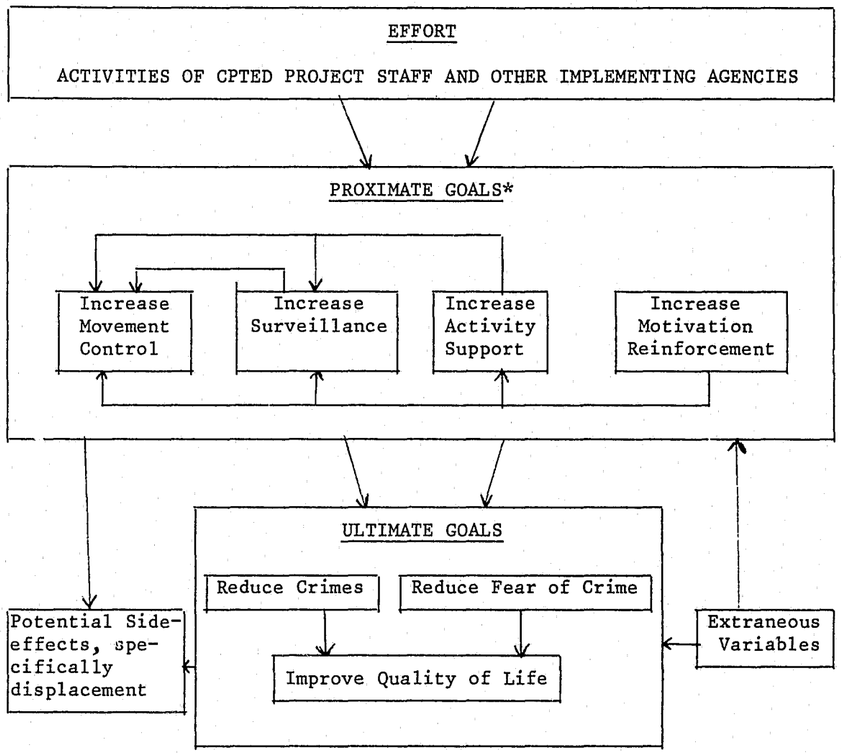
PROJECT EVALUATION

The evaluation was designed to assess two aspects of the demonstration. The first objective was to test if the CPTED strategies had been properly and adequately implemented. (If the implementation was faulty, it would be difficult to conclude from the demonstration that the project proved or disproved the CPTED theory.) The second objective was to determine whether the results of the project in fact support the theory.

The evaluation model for the school demonstration is illustrated in figure 15. The model is based on the assumption that in order to evaluate the CPTED process -- i.e., program success -- one first had to know what effort had been expended on the project. This included knowledge of the amount, cost, and timing of staff activities, as well as the activities of other groups related to the environmental changes that had been developed. It was hypothesized that the activities of the implementing groups would increase movement control, surveillance, activity support, and motivational reinforcement -- in other words, that project activities would change the crime-opportunity structure at the schools.

Changes in the opportunity structure constitute measures of attaining the proximate goals of the project. The ultimate goals of the CPTED approach are to reduce crime and the fear of crime and thereby to improve the quality of life in the area. Depending on the specific environment, there may be other ultimate goals of a CPTED project. For example, in the school demonstration an improvement in the general learning environment and school performance might be considered an ultimate goal.

Once the effort, the proximate goals, and the ultimate goals have been identified, one final consideration must be addressed: extraneous variables. These are factors which may influence the attainment of a project's ultimate goals but which have no relationship to specific project activities. For



*The four proximate goals are not mutually exclusive. Surveillance increases also serve to increase movement control; increased activity support promotes increased surveillance and movement control; and increased motivation reinforcement provides support for increases in the other three.

15 - CPTED Evaluation Framework

example, there may have been other special programs implemented at the schools at the same time as the demonstration. If these programs had objectives similar to the demonstration -- e.g., improving attendance and student attitudes toward the school -- it would be very difficult to identify the effect due to CPTED and that caused by the other program.

EVALUATION DESIGN

Three different types of evaluation were involved: the assessment of effort, proximate goal attainment, and ultimate goal attainment. The type of data used and the way it was analyzed varied according to the type of evaluation.

The original design for the evaluation was to use four "control" schools in Broward County, matched as closely as possible to the "experimental" schools. Before-and-after measures and time series measures would be taken at both the experimental and control schools to assess the impact of the CPTED tactics, and to determine if the observed differences could appropriately be attributed to the CPTED effort. As finally adopted, however, the evaluation plan used neither control schools nor time series measures. Rather, it used a simple before-after design, comparing the experimental schools with the other sixteen high schools in Broward County. This evaluation design was relatively weak in its power to attribute causality, especially where the anticipated effects would be small and localized to particular sub-environments and tactics.

The evaluation design was based on a sub-environmental approach, in which each tactic implemented by a demonstration school was to be assessed by relevant data points. For example, one school had implemented changes in a number of restrooms. Survey data was to be examined to determine if there were changes in student behavior or perceptions toward these restrooms. Any such changes would be compared to attitudes and behaviors in the other demonstration school restrooms, and in other county schools where data are available. This approach allowed the researcher to relate changes in the physical environment to changes in attitude and behavior. A total environmental analysis was also utilized, to compare extra-environmental behavior (e.g., student morale, reporting of crimes) in the project schools to that in the rest of the county.

The evaluation of effort involved documenting the number, type, and quality of project activities and the time and cost involved in carrying them out. This documentation included the cost of support activities, such as project planning, as well as the cost of direct activities, such as implementing physical changes. The data used in the evaluation of effort

included project files, observations, and interviews with key persons and area users.

The evaluation of proximate goals involved determining if the project's effort or activities altered the opportunity for crime at the site by increasing movement control, surveillance, activity support, or motivational reinforcement. These dimensions of the crime-opportunity structure were measured before and after the period of project implementation. Thus improvements were measured against a baseline of existing conditions in the project schools.

A key measure of proximate-goal attainment was a student attitude survey. This was distributed by the Broward County Research Department in the winter of 1977 and 1978 and again in the spring of those years. The attitudinal questions were virtually identical in all four surveys. In addition, interviews were conducted with key persons, including administrators, faculty, and students.

Another measure of proximate-goal attainment was behavioral observations. For example, the development of the patios was designed to increase student use of the patio and decrease the use of undesirable areas such as auto parking lots and smoking corridors. The observer counted the number of students using the patio and the number using the undesirable areas, four times for each school; in similar fashion, the observer counted the number of groups in the patio, where groups were defined as two or more students talking together. Allowances were made for school vacations and inclement weather. These observations began at the onset of the first lunch period and ended with the finish of the last lunch period, but no data was collected during the five-minute class change periods.

The ultimate goals of the project were a reduction in crime, a reduction in the fear of crime, and improvement of the quality of the educational environment of the schools.

Changes in the rate of crime were to be measured through the computerized reports of the Department of Internal Affairs. Due to delays in project implementation and the expiration of the research contract, the report for 1977-78 was not available when the evaluation was to be completed. Data for 1976-77, while available, would be confounded by the fact that various tactics were in the process of being implemented at this time.

In lieu of crime report data, therefore, the evaluation of project impact relied on the use of victimization surveys. Five surveys were distributed, as indicated on the following page:

	Distributed	Returned	Return Rate
Spring 1976	4,800	2,772	57.8%
Winter 1977	2,000	1,428	71.4%
Spring 1977	2,000	1,483	74.2%
Winter 1978	2,000	1,416	70.8%
Spring 1978	2,000	1,264	63.2%

The winter 1977 victimization survey had questions identical to the spring 1976 survey, but in different order. The spring 1977 survey differed from the previous surveys in the following respects:

* Questions concerning extortion incidents and dollar amounts of theft and extortion were dropped.

* Questions dealing with fear of theft in various sub-environments were added.

* Questions to obtain overall theft and assault incident rates were added.

* Scaled response for the fear of theft and fear of assault questions was changed from No/Yes to Never, Almost Never, Sometimes, and Most of the Time. In addition, the wording of the fear questions was changed from "Are you afraid," to "How often are you afraid," thus altering the demand characteristics of the question.

* The number of environments tapped was dropped from thirteen to nine, of which two were completely new.

In summary, the evaluation of ultimate-goal attainment was severely hampered. Not all of the project tactics had been implemented by the time of the evaluation, school crime reports were not available for the post-implemention period, and the victimization surveys did not maintain a uniform content.

RESULTS

EVALUATION OF PROJECT EFFORT

Project effort consists of a) the adequacy with which the project was planned; b) documentation of the work carried out (i.e., number, type, and quality of activities); and c) an assessment of the immediate changes in the school environment as a result of the CPTED program, including the cost of these changes.

Table 16 summarizes the status of the planned tactics. The conclusions in this table are based on on-site observations, interviews with key persons, and examination of official records. The table indicates that most of the tactics were implemented essentially as planned. Nevertheless, the tactics that were not implemented as planned could limit the demonstration's impact. Specifically:

Cost overruns caused several tactics to be dropped. These included parking lot landscaping at the two schools for which it had been planned and locker room painting at three schools. In addition, a restroom modification in South Plantation was not permitted because the restroom was close to a food-service area.

Two strategies were constructed according to specifications but did not become functional: portable ticket booths and the queuing lanes for South Plantation's snack bar. According to the principals, the ticket booths were not taken out of storage because their heavy construction made them clumsy to handle; furthermore, they were fitted with wheels and it was feared that students would move them about campus without permission. The poles and ropes for the queuing lanes were not installed because it was felt that the poles were more hazardous than the congestion they were designed to alleviate.

Some tactics were implemented in modified form, with

Tactic	School	Implemented	Partially Implemented	Modified	Not Implemented
Parking lot gates	BA			X	
	DB		X		
	MA		X		
	SP		X		
Parking lot landscaping	DB				X
	SP				X
Courtyard	BA		X		
	DB	X			
	MA	X			
	SP	X			
Police precinct	BA	X			
Burglar alarms	BA	X			
	MA	X			
	SP	X			
Locker rooms	BA			X	
	DB				X
	MA				X
	SP				X
Restrooms	MA		X		
	SP				X
Communications	MA	X			
Bicycle Parking	DB	X			
	MA	X			
	SP	X			
Border definition	DB	X			
	SP	X			
Bus loading zone	BA	X			
Ticket booths	MA				X
	SP				X
Hallways	BA	X			
	MA		X		
External stairs	BA			X	
	DB			X	
	SP			X	

16 - Summary of Implementation Status
(continued on following page)

Tactic	School	Implemented	Partially Implemented	Modified	Not Implemented
Educational tactics		X			
Parking lot	SP				X
Teacher area	SP			X	
Snack bar	SP			X	

16 - Summary of Implementation Status (continued)

varying implications for the anticipated impacts. For example, eliminating windows in the external stairwells (because of possible building code violations) probably minimized that tactic's impact, while modifying South Plantation's teacher planning area into a security office may have increased that tactic's impact on natural surveillance and movement control.

Another possible outcome is suggested by the implementation of the Boyd Anderson locker-room tactic, where color-coding by area of the room was modified to color-coding by row. It is possible that this type of color-coding still enables teachers or students to observe people at lockers where they should not be, but the dispersion almost certainly makes this discrimination more difficult. On the other hand, by preventing congestion, this modification may increase the tactic's value for preventing assaults.

In summary, the major problem with implementation, was the excessive time taken to complete a number of tactics. In spite of the delays, it is the judgment of the evaluators that the effort goals of modifying the schools' physical, social, managerial, and law enforcement characteristics were, for the most part, achieved as designed. Therefore the project can fairly be evaluated as a demonstration of the CPTED approach.

ATTAINMENT OF PROXIMATE GOALS

The success of CPTED in reducing crime and fear of

crime is predicated on attaining the proximate goals of gaining a greater degree of movement control, increasing surveillance and activity support, and reinforcing crime-prevention motivation. In developing an evaluation plan, the evaluators identified specific measurement points for the physical and social environment. The measurement points related to the physical environment include:

* The physical security of the school environment (target hardness).

* The surveillability of the school environment (how well one can see or hear what is going on).

* The usability of the school environment (what is in the physical environment and how it can be used by students).

* Psychological dimensions of the school environment related to CPTED design concepts (e.g., aesthetic quality, degree of personalization, and clarity of defined spaces).

Those measurement points associated with the social environment are:

* The degree to which students are committed to watch for suspicious or criminal activities, and the degree to which they report suspicious or criminal activities.

* Actual student crime reporting behavior.

* The extent of social networks and the degree of social cohesiveness.

* The actual use of the school environment by students.

* Student identification with the environment (i.e., to what extent there is a sense of belonging).

Insights into the degree to which the proximate goals were attained -- for some of the sub-environments and overall-- were drawn from structured observations, fear and victimization surveys, and staged suspicious incidents. Findings are reported here by sub-environment.

Bus Loading Zone

The bus-loading zone was implemented before pre-test observational data could be collected. After implementation, it was observed that drivers used the zone a high percentage of the time, and that students entered the zone in an orderly fashion 100 percent of the time. However, in one-third of the

cases, students entered the buses outside the zone. Adult monitors were present at all observation periods; they directed buses 33 percent of the time, and student loading 40 percent of the time. According to the observer, the adult monitors appeared to be aware of student behavior during the loading.

In summary, organized surveillance (via the monitors) and activity support (i.e., the revised zone loading policy) appeared to be controlling movement as well.

Bicycle Compounds

Fenced bicycle compounds were installed at McArthur, Deerfield Beach, and South Plantation high schools. Table 17 indicates that South Plantation had a substantially smaller percentage of bicycles parked within its compound than did the other schools. However, observer records indicate that there was severe overcrowding in the bicycle compound at South Plantation; thus, the bike compound was not of sufficient size. If the bike compound tactic were to reduce bicycle theft, we would expect that the reduction would be more obvious at McArthur and Deerfield Beach than at South Plantation. Note that practically all the bikes in each easily surveillable compound were locked.

School	Average Number of Bicycles on Campus	Percentage of Bicycles in Compound	Percentage of Bicycles Locked in Compound
South Plantation	113	47	95
Deerfield Beach	46	96	94
McArthur	62	80	92

17 - Bicycle Compound Utilization

Courtyards

Courtyards or patios were constructed in all four schools. The purpose was to attract students from other parts of the campus, where surveillance was difficult, to an easily surveillable area where they would feel comfortable and be able to gather in small groups. However, an unanticipated event affected the courtyards' potential for fulfilling that purpose: in September 1977, a countywide policy was instituted forbidding smoking anywhere on campus.

The on-site observer recorded the following information for each courtyard: number of students, percentage of tables and benches occupied, percentage of students using the newly constructed space, and the cleanliness of the area.

Figure 18 shows the number of students present during observation periods in the Boyd Anderson patio. This figure does not indicate a substantial increase in the number of students utilizing the patio; indeed, a major decrease occurred when smoking was banned. (It should be noted that, as of the last observation period, the patio has not been completed.) Figure 19 does show an increase in the percentage use of the newly developed area. This figure indicates that, prior to construction, there was very little use of the large area of the courtyard; as construction proceeded, 70 to 80 percent of the students used this area as opposed to other parts of the patio. Figure 20 shows the percentage of new amenities used by the students. This figure indicates that 100 percent of the tables and benches were being used during the last two observation periods; the figure also demonstrates an increasing utilization rate for these amenities.

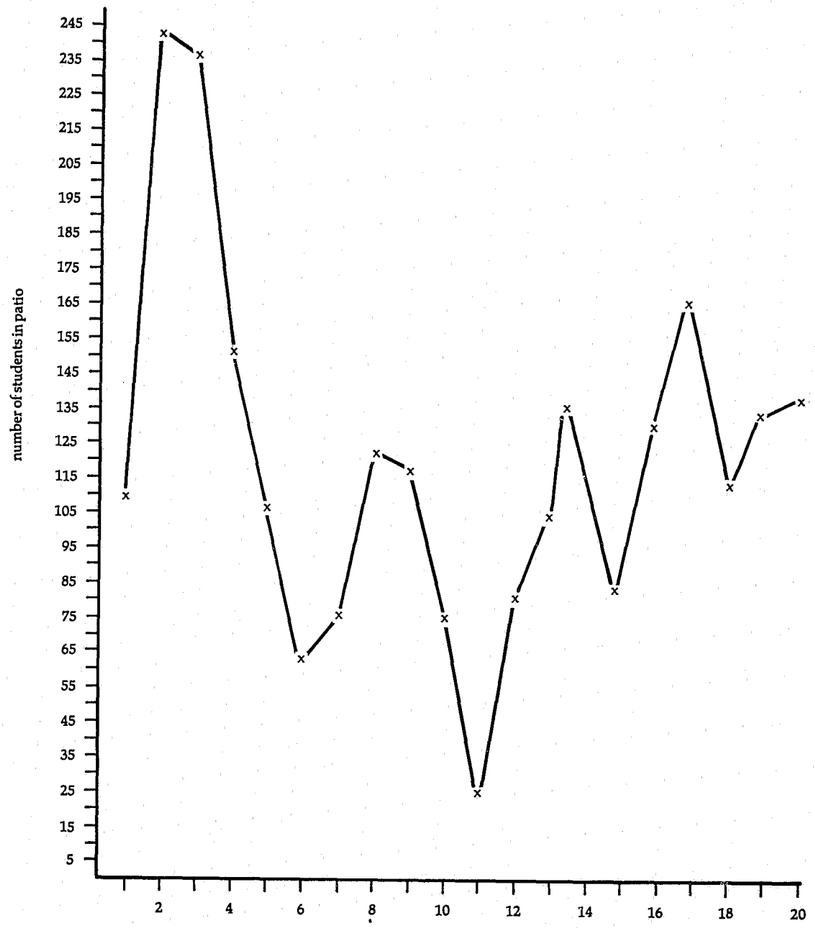
Figure 21 shows the number of students in the patio during the evaluation period at South Plantation. There was a decrease in the number using the patio during the construction period; subsequently, the number of students using the patio appears to have risen to the previous level. However, the number of students using the patio did not exceed the pre-construction usage.

One of the objectives of the patio construction was to attract students away from less desirable areas, such as the outside smoking corridor. To gauge this objective, the number of students utilizing this corridor was measured. Figure 22 shows the number of students in the smoking corridor during observation periods: note the precipitous decrease associated with the September 1977 smoking ban.

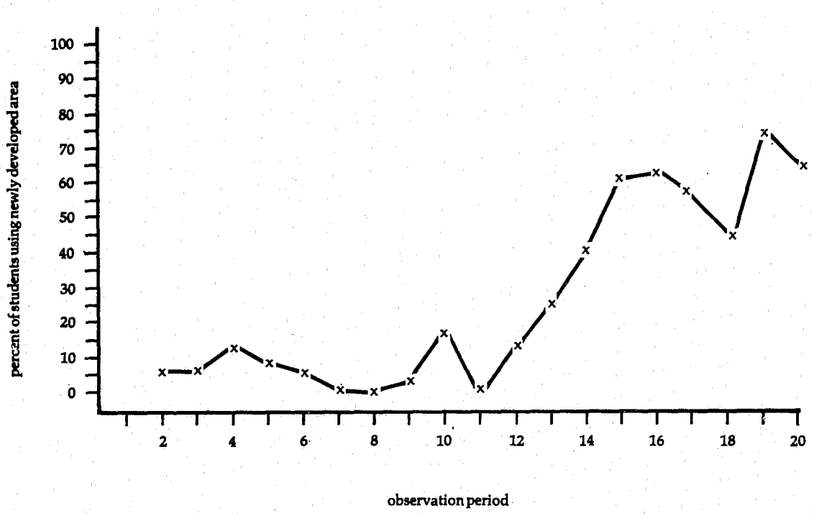
The data from Deerfield Beach and McArthur paralleled those from the other two schools, suggesting that, within the severe limitations introduced by the smoking ban, the patio was successful in attracting students into an easily surveillable, movement-controlled area. In addition, the fact that the completed areas were being utilized by more students than the other areas suggests patios are motivation-reinforcing amenities.

Hallways

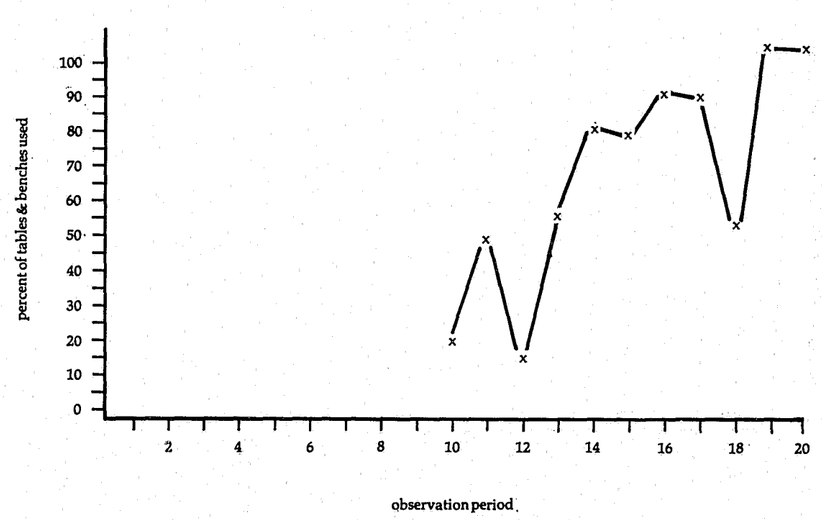
A major tactic at Boyd Anderson was painting graphic designs in the hallways. Throughout the evaluation period,



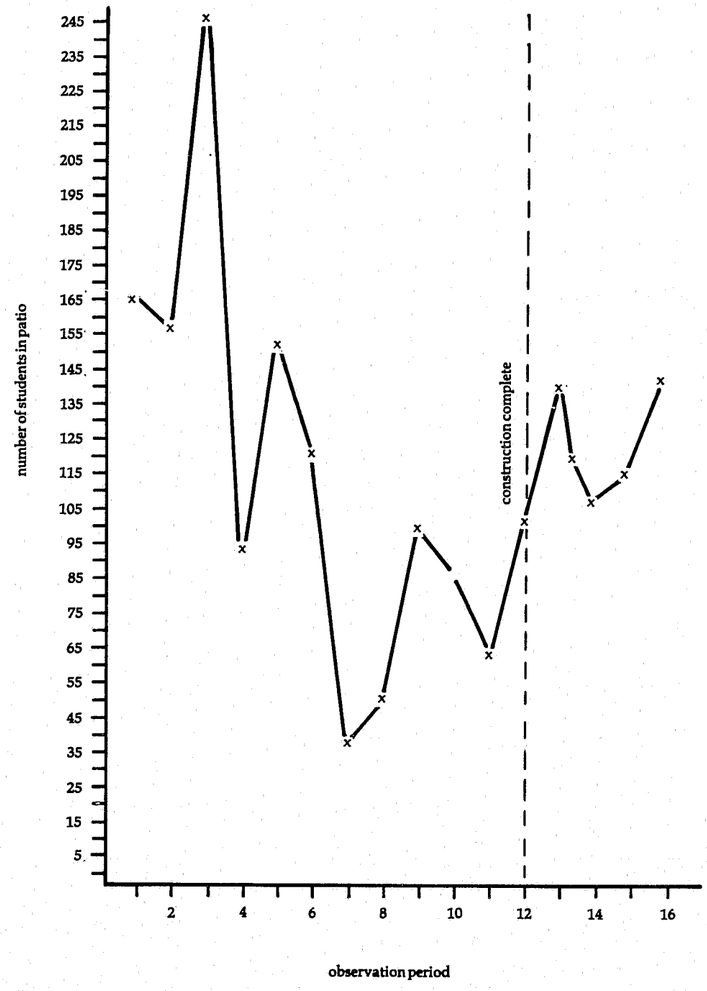
18 - Patio Observations at Boyd Anderson: Number of Students



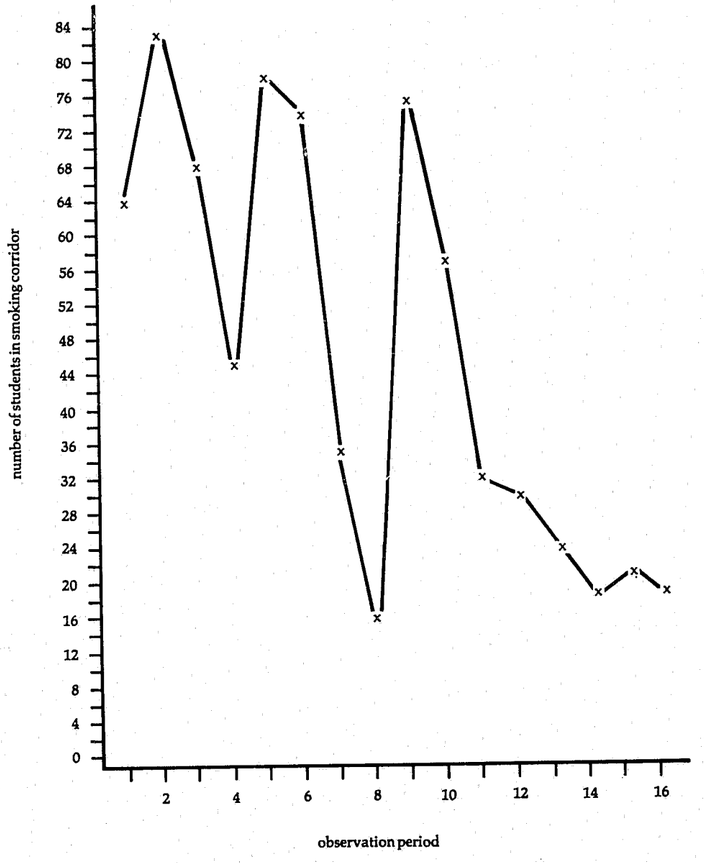
19 - Patio Observations at Boyd Anderson: Percentage of Students



20 - Patio Observations at Boyd Anderson: Percentage of Amenities Used



21 - Patio Observations at South Plantation: Number of Students



22 - Corridor Observations at South Plantation: Number of Students

these graphics were judged to be in excellent or very good condition. The graphics were not defaced or vandalized during this time, indicating that this amenity had good potential for motivation reinforcement.

At McArthur, an enclosed hallway was altered by installing four large windows in the walls between some of the classrooms and the corridor, and by enlarging sixteen door windows. An average of twelve students walked by these windows during each observation period, with approximately 31 percent looking into the classroom. During the observation periods, an average of 49 percent of the door windows were covered, rendering them ineffective. There appeared to be no trend over time in percentage of windows covered. Data concerning the four large wall windows indicated that teachers often blocked these windows with movie screens and globes and other large objects. Although there were attempts by the administration to remove objects from the wall and door windows, these were not always successful.

Key-person interviews indicated that some teachers were annoyed by this tactic. They felt that their privacy was invaded and that the classroom was disrupted by student activity in the hallway. Their negative reactions indicate marginal utility for the tactic.

Student surveys provided additional data on hallway strategies. There was a significant increase in the perceived likelihood of identifying an interloper in the hallway at McArthur, relative to the other county high schools over the demonstration period. The final average perceived likelihood was on par with the rest of the county ($F\ [1,5254] = 9.305$, $p < .002$). It is interesting to speculate whether the reported difference would have been larger if the design directive had been maintained more consistently.

As for the perceived likelihood of an interloper committing a theft or an assault without being detected, the results show a significant difference only for assault ($F\ [1,5254] = 4.147$, $p < .042$). One possible explanation is that tactics to increase the surveillability of an environment only affect people's perceptions about assault and not theft, a distinction that heretofore was not made very explicit.

Student ratings of teachers' surveillance of the hallway area show an increase at McArthur, reflecting the impact of CPTED on teacher surveillance ($F\ [1,5254] = 14.376$, $p < .001$). This contrasts with the ratings of students in the rest of the county, which show a decrease in the perceived quality of surveillance of the hallways by teachers.

The perceived difficulty of entry of an interloper

into a hallway increased significantly at McArthur relative to other schools in the county. Apparently the design directive for the hallway was effective in achieving the proximate goals of increased movement control as well as surveillance.

Restrooms

The doors to the restrooms at McArthur were locked in an open position throughout the evaluation effort. Thus, this tactic can be considered to have been implemented successfully. However, only two-thirds of the restrooms were modified.

To assess the impact of the restroom tactics on the identification of someone in the restroom who did not belong there, students were asked: "Suppose a person who did not belong there was in the restroom area. How likely is it that people would know he did not belong there?" An analysis of variance highlighted a significant difference between the "pre" and the "post" surveys. Students at McArthur perceived an increase in the likelihood of identifying an interloper, while the perceptions of the students in the rest of the county schools stayed at the same level ($F\ [1,5278] = 4.875$, $p < .027$). The increase on the part of the McArthur students brought the mean level of their responses to the same level as that of the county. This result indicates that the crime problem in the restrooms at McArthur was perceived as being worse than in the rest of the county and illustrates the effectiveness of CPTED in creating a change in student perceptions.

In order to assess the possibility of crime detection in the restrooms, students were asked: "How likely is it that a person could steal something in the restroom without being seen?" and "How likely is it that a person could physically attack another person in the restroom without being seen?" There were no statistically significant differences.

The student assessment of teachers' surveillance was that the teachers did not watch what was going on in the restrooms very well. Depending on the survey, from 75 percent to 91 percent of the students rated teacher surveillance as poor.

The proximate goal of movement control was measured by asking the students: "How difficult is it for someone who does not belong there to get into the restroom?" Survey results were encouraging. A pre-post difference was found for McArthur in that the perceived difficulty of entry increased, and this difference was statistically significant ($F\ [1,5254] = 16.788$, $p < .001$). This difference was not found in the rest of the county.

OVERALL IMPACTS

Student Crime Reporting Behavior

An important aspect of crime prevention in schools is the willingness of students to report questionable or illicit behavior. Two questions were asked in the last four surveys about student intentions regarding crime reporting. In addition, a series of "suspicious events" were staged at each of the project schools to provide an indication of whether student intentions are consistent with their actions. The questions were:

* If you saw someone stealing something at school, do you think you would:

Do nothing, it is none of my business.

Do nothing, it would not do any good.

Do nothing, the trouble-maker might take it out on me.

Do nothing, I would not tell on another.

Try to stop it myself.

Report it.

* If you saw someone physically attack another student at school, do you think you would:

Do nothing, it is none of my business.

Do nothing, it would not do any good.

Do nothing, the trouble-maker might take it out on me.

Do nothing, I would not tell on another.

Try to stop it myself.

Try to get other students to stop it.

Report it.

For both the project and control schools, the response most frequently given for the first question was "Report it." In the case of assault, it was "Report it" followed by "Try to stop it myself." In short, many students, and in some cases the majority indicated they would get involved, rather than do nothing. There were no consistent pre-post differences for either item.

Concepts Concerning the School and Social Responsibility

To assess the student's feelings about the school and his or her sense of responsibility toward crime prevention, a number of questions were included in the last four surveys. The results are presented in table 23.

The first question dealt with the student's opinion of the student body as a whole. It can be seen that the students are evenly split as to whether students help each other or go their own way; there are no significant changes from survey to survey. With respect to difference among schools, South Plantation, in three of the four surveys, was rated the lowest (i.e., a place where students tend to go their own way). This finding is interesting, since this school demonstrated the most concern and collective action about a "thief" in the parking lot during a staged incident.

The next question dealt with students' sense of territoriality within the context of the school; that is, whether they felt part of the school. A rank ordering of the schools again showed South Plantation as the lowest by 20 to 30 percent.

A third question, dealing with student perceptions of the degree to which students in general are concerned with preventing crimes, did not result in statistically significant differences among schools or between surveys. However, Boyd Anderson and McArthur showed positive changes in the spring 1978 survey (table 24).

For the students' rating of the crime-prevention efforts of teachers and other adults (table 25), there was a significant difference in the spring survey data ($F\ [4,2262] = 2.807$, $p < .024$), indicating a relationship between the CPTED project and perceptions of improved efforts in the project schools. These improvements in attitudes, however, appear to be limited to Boyd Anderson and McArthur.

The last three questions dealt with students' understanding of the concepts underlying CPTED, such as their personal efficacy in preventing crime and their perceptions of whether the offenders in a school environment were many of the other students or just a small group of "troublemakers." Most students agreed with the statement that there are certain areas in the school that made it easy for persons to commit crimes without being seen. The students were evenly split concerning whether they as individuals could do anything to help stop the school's crime problem. And most students agreed that a relatively small group of troublemakers was responsible for most of the crime problems. However, with respect to these questions, the statistical analysis showed no significant differences among schools or between survey periods.

Question	School	Pre-CPTED W1977	Pre-CPTED S1977	Post-CPTED W1978	Post-CPTED S1978
		Percent "most students help each other"			
In general, which kind of school would you say this is mostly--one where most students help each other or one where most students go their own way?	BA	60.7	53.5	49.2	53.1
	MA	59.7	49.3	57.1	51.0
	SP	44.9	44.6	54.9	43.1
	DB	60.0	61.6	51.5	58.8
	CO	58.4	53.4	58.0	55.3
		Percent "feel a part of the school"			
Would you say that you really feel a part of the school--or do you think of it as just another place to spend time?	BA	67.2	64.4	74.2	59.7
	MA	73.4	60.8	75.6	66.7
	SP	40.0	53.7	59.5	46.6
	DB	71.4	80.2	67.7	65.3
	CO	67.7	65.5	65.8	66.1

23 - Student Survey: Feelings About the School and Sense of Responsibility

Question	School	Response	Pre-CPTED W1977 (%)	Pre-CPTED S1977 (%)	Post-CPTED W1978 (%)	Post-CPTED S1978 (%)
How much do you think students at your school are concerned with preventing crimes from happening to other students?	BA	A Great Deal	10.3	20.3	6.5	21.7
		Somewhat Concerned	51.7	54.1	56.5	58.0
		Not Much Concerned	37.9	25.7	37.1	20.3
	MA	A Great Deal	5.1	14.5	11.5	13.4
		Somewhat Concerned	58.2	47.4	51.3	59.8
		Not Much Concerned	36.7	38.2	37.2	26.8
	SP	A Great Deal	7.5	5.9	16.9	8.8
		Somewhat Concerned	56.3	47.1	59.6	61.4
		Not Much Concerned	36.3	47.1	23.6	29.8
	DB	A Great Deal	11.9	14.8	10.8	11.5
		Somewhat Concerned	65.5	51.1	64.5	60.1
		Not Much Concerned	22.6	34.1	24.7	28.4
	CO	A Great Deal	21.2	13.4	11.4	11.8
		Somewhat Concerned	50.8	55.1	58.3	56.7
		Not Much Concerned	28.0	31.5	30.2	31.4

24 - Student Survey Responses: Student Concern

Question	School	Response	Pre-CPTED S1976 (%)	Pre-CPTED S1977 (%)	Post-CPTED W1978 (%)	Post-CPTED S1978 (%)
Overall, how would you rate the job the teachers and other adults are doing in protecting students from crime at your school?	BA	Very Good	20.8	11.1	16.0	22.0
		Good Enough	32.1	38.9	42.0	49.2
		Not So Good	47.2	50.0	42.0	28.8
	MA	Very Good	9.7	7.1	12.2	14.5
		Good Enough	34.7	38.6	39.2	38.6
		Not So Good	55.6	54.3	48.6	47.0
	SP	Very Good	9.2	9.3	12.7	8.5
		Good Enough	46.2	42.6	50.6	29.8
		Not So Good	44.6	48.1	36.7	61.7
	DB	Very Good	11.0	13.3	7.9	9.7
		Good Enough	49.3	53.0	44.7	49.3
		Not So Good	39.7	33.7	47.4	41.0
	CO	Very Good	14.4	9.6	11.6	11.3
		Good Enough	45.4	45.6	47.3	47.2
		Not So Good	40.2	44.9	41.1	41.5

25 - Student Survey Responses: Teacher Concern

Staged Incidents

To assess the actual crime reporting behavior of the students, at least at a qualitative level, "suspicious" incidents were staged at four project schools and two comparison schools.

At Boyd Anderson, most of the students in the parking lot where the incident was staged appeared to pay little or no attention. It was assumed that students would attempt to halt or report a suspicious person; instead, some students seemed willing to assist the "intruder" by providing information on security arrangements. The event took almost fifteen minutes--a great deal longer than anticipated. The parking lot monitor eventually did report the intruder to a school security officer.

McArthur had a security system different from other project or county schools. There was a monitor on duty in the student parking lot during each lunch hour; this individual had a specific procedure to follow if anything suspicious occurred. The procedure involved a telephone report to the main office, which used radios provided by the CPTED program to contact campus security officers, who proceeded to the scene of the incident. For the staged event, the intruder entered the lot on foot through the front main entrance, which opens on a public thoroughfare. The monitor spotted him immediately but waited to observe further before reacting. Two students also observed the suspicious person but took no action. Security officers arrived less than twelve minutes after the incident was reported by the monitor.

The staged incident was greatly embellished at South Plantation, including the use of a decoy car and the removal of a satchel from it by the purported thief. Substantial student interest was aroused and there was some attempt at intervention. In fact, further incidents could not be staged at the school because knowledge of the event rapidly spread throughout the student population.

At Deerfield Beach, students had been warned to look for unusual activities around the campus. The evaluators thought that this might bias student reaction and increase the level of involvement in the staged event. However, Deerfield Beach proved to be the most apathetic school in terms of student response. A decoy car was also used in this incident, and the intruder and an observer both attempted to provoke student reaction. One student eventually reported the incident; a number of others obviously observed it and showed some concern, but never actually intervened or contacted school personnel.

The comparison schools showed even poorer results. At

Hollywood Hills, three students (two of whom were monitors) observed the event but none reported it. At Miramar, six students observed the incident but did not report it. Security personnel and administrators were dismayed by the apathy shown, particularly since parking lot monitors saw the incidents at both schools.

Table 26 shows the student reaction to the staged events, as recorded by an observer. The observer noted how many students were in the lot, what percentage was judged to have observed the theft, and the number that directly intervened or left the lot as if to report the thief. The number of students in the lot ranged from sixteen to sixty-nine, with an average of fifty. The student parking lot at McArthur is farthest from the main campus and thus had the fewest number of students present.

An average of 39 percent of the students in the parking lot at the project schools apparently observed the theft, compared to 6 percent at the two comparison schools. Although the sample of staged incidents is very small, it does appear that the students at the project schools were more alert than the students at the county schools. At all schools except Hollywood Hills (a control school) and Boyd Anderson, at least one student was judged to have left to report the incident. At South Plantation and at Miramar (a control school), one student directly intervened.

The presence of more than one monitor seemed to have an inhibitory effect on reporting. At Miramar and Hollywood Hills, three monitors were present, with none reporting the incident. At the other schools, the monitors were alone and did report the theft. Interestingly, the one school without monitors, South Plantation, had the greatest involvement by the student population. As noted earlier, most of the students there observed the theft and a great many reported it or attempted to intervene.

While the majority of the students indicated on the survey that they would report a crime, they did not do so with these staged events. The increased student involvement in the project schools, as compared with student reactions in the two comparison schools, may be attributed to increased student awareness as a result of CPTED's overall impact.

At both the sub-environment level and overall, there were numerous indications that the CPTED demonstration project had impacted upon the proximate goals of movement control, surveillance, activity support, and motivation reinforcement.

	Demonstration Schools				Comparison Schools	
	DB	MA	SP	BA	MI	HH
PRESENT IN LOT	46	16	69	42	69	58
Observed "theft"	17%	50%	68%	19%	7%	5%
Left as if to report	1	1	10+	0	3	0
Directly intervened	0	0	1	0	1	0
PRESENT IN PERIMETER	45	0	110	50	54	35
Observed "theft"	13%	--	55%	6%	2%	0%
Left as if to report	1	--	0	0	0	--
Monitors present	1	1	0	1	3	3
Actually reported	Yes (two)	Yes (monitor reported)	Yes (many)	Yes (monitor reported)	Observer reported a stranger	No

26 - Student Reaction to "Suspicious Event"

ATTAINMENT OF ULTIMATE GOALS

This section examines the extent to which the ultimate goals of crime and fear reduction were attained in the modified restrooms and hallways and in the overall school environment. The analysis is based on five student fear and victimization surveys.* The surveys asked the respondent

*Due to the timing of the surveys or the wording changes in the relevant items, survey data on the sub-environments other than restrooms and hallways is too ambiguous to justify even tentative analysis.

whether he or she had been physically attacked, hurt, or bothered (assault), or had something stolen (theft), during the past year. Fear was measured first by asking the respondent how safe or unsafe he or she felt in the sub-environments, and then to assess how safe or unsafe people were in general.

Restrooms

Since the modifications to the restrooms at McArthur were completed after the spring 1977 survey, the first three surveys (spring 1976, winter 1977, and spring 1977) can be treated as pre-data points and the last two (winter 1978 and spring 1978) as post-data points. The spring comparison showed a substantial decline in theft in the restrooms (from 12.2 to 2.1 percent). The winter comparison showed a smaller decline (from 7.6 to 5.1 percent). The assault rate, which ranged from 3.1 to 5.4 percent for all five surveys, was too low to show a significant difference.

The same analysis was made for the county schools with somewhat contradictory results. The spring comparison showed no change in assault or theft, but the winter comparison showed a decrease in thefts (from 12.6 to 8.2 percent).

It seems reasonable to conclude that the restroom modifications attained the ultimate goal of theft reduction, since the reduction in the county schools was much less.

The same analytic strategy was applied to the fear questions. No statistically significant differences emerged from the three tests, indicating that the restroom treatments did not reduce the students' perceived lack of safety in the restrooms.

Hallways

McArthur was the only school where windows were installed between the corridor and the classrooms. Analysis showed no significant change in theft or assault rates. Analysis of fear revealed an increase in perception of safety from assault in the hallway (see table 27) but no change in the perceived safety from theft. The fact that some teachers occasionally covered the windows with papers and posters may have attenuated the potential benefits of the strategy.

Overall Impact

In the last three surveys, students were asked the following questions:

(Does not include Spring 1976 survey.)

	Pre-CPTED (%)	Post-CPTED (%)
Very Safe	5.7	14.3
Safe	40.7	41.5
Somewhat Safe	43.2	38.4
Not Very Safe	10.4	5.8

27 - Judgment of Safety from Being Assaulted in Hallway

* Overall, counting this year only, did anyone hurt, bother, or physically attack you at school?

* Overall, counting this year only, did anyone steal anything from you at school this year?

* Overall, how often are you afraid that any of the following things might happen to you at school:

Someone might hurt, bother, or physically attack you.

Someone might steal something from you.

The victimization rates at the project and county schools were as high as 33.3 percent for assault and 52.2 percent for theft. No specific area experienced a disproportionate amount of crime, with the exception of the relatively high theft rates for restrooms.

For the sake of comparability, the pre/post examination was limited to the spring 1977 and spring 1978 surveys. There was a slight reduction in assaults at all but one school (including the county schools). However, the only notable change was at Boyd Anderson, where the assault rate decreased from 33.3 to 22.4 percent. This finding is consistent with the fact that Boyd Anderson received the largest CPTED effort.

There was a significant reduction in theft at the project schools, ranging from 5 percent at Boyd Anderson to 12 percent at South Plantation. Although there was also a reduction for the county schools, it was not as large (4 percent mean); nor was it statistically significant.

No statistically significant changes emerged with respect to student perceptions of safety. All schools showed a high percentage of students reporting that they were afraid of

assault and theft some or most of the time, with concern about theft more prevalent than concern about assault. The overall percentages are much higher than those obtained for the sub-environments, thus indicating that perceived lack of safety is a problem throughout the school environment and not limited to a few locations.

No reliable conclusions could be drawn regarding the institutionalization of the CPTED concept.

DISCUSSION

Although there were problems and difficulties at each stage, the demonstration project was, for the most part, implemented as designed if not as scheduled. There were moderate increases in movement control, surveillance, activity support, and motivation reinforcement. The brief period available for assessing crime and fear reduction precluded extensive documentation of ultimate goal impacts. Nevertheless, some reduction in crime victimization was detected.

The following discussion highlights lessons learned during implementation of the various tactics and directives, and offers recommendations.

Funding Support

Major efforts were required to secure funding support for implementing the CPTED tactics. As a result, significant delays were experienced.

Westinghouse began data collection in the fall of 1974. According to later key-person interviews, this resulted in an expectation that the project would begin shortly and disappointment when it did not. The initial interest and enthusiasm at the schools was dissipated by the long delay which followed. In addition, a number of key participants -- including two principals -- left the schools.

It was difficult to anticipate that it would take almost two years to obtain funding. The attempt to develop total local funding was not successful, and LEAA ultimately provided the direct support. It is recommended that implementation funds be included in the initial grant or contract for future demonstration projects.

Bureaucratic Problems

The CPTED program did not exist independent of the school system bureaucracy. Discussions with administrative officials in the system indicated that it was difficult to initiate change -- not unusual in a system as large and as complex as that in Broward County. A more realistic timeframe might have been developed if planners had studied the schedule of previous construction projects handled through the School Planning Office.

It is recommended that schedules be developed based on the previous performance of grantees, instead of being established to fit the proposed grant period.

Resistance to Change

There is some evidence that a "not invented here" syndrome existed in the early stages of the CPTED project. For example, an outside architect provided the sketches and preliminary drawings for several tactics; this may have created some initial resistance on the part of the individuals responsible for implementing these plans. A cooperative and well-coordinated relationship was never established between the Westinghouse architect and the School Planning Office.

In future projects, a greater effort should be made to have key local resource persons -- including students, faculty, and principals -- in decision-making roles. There is no substitute for highly visible local advocates in minimizing resistance to change.

Gaps in Experience

Based on conversations with the Director of School Planning, it appears that his office did not have extensive experience with any program similar to CPTED. The development and supervision of many small projects, located in different schools, was a relatively new experience. This lack of background may have been partially responsible for the delays in implementation.

It is recommended that more attention be given to capacity-building activities for personnel who have direct responsibility for implementing CPTED tactics. Workshops and training sessions conducted by CPTED consultants should be considered.

Input from Real Constituency

There was no local advisory committee with a strong, vested interest in seeing the Broward County CPTED project implemented in a timely and efficient fashion. The real constituency for this program consisted of principals, teachers, and students, but no formal mechanism was developed to allow them to voice concerns about the progress of CPTED implementation. It is suggested that, in projects of this nature, a strong local input mechanism and continued interaction be programmed.

Assessing and Sustaining Priorities

It is the impression of the evaluators that crime in the Broward County School System was not a high-priority concern. This judgment was derived from discussions with principals, the school superintendent, and other officials involved in the CPTED project. A system facing a $10 million deficit and the potential dismissal of hundreds of teachers obviously had other pressing concerns, especially since the crime problem in Broward was not extraordinary. If the assumption is correct that the CPTED project did not have high priority within the administration, it is understandable that implementation delays were tolerated.

One individual in the School Planning Office was responsible for CPTED implementation. This individual was eventually dismissed, but poor administration of the project's construction phase was tolerated for a long period of time. This "benign neglect" adds support to the low-priority hypothesis. It is not clear whether the initial support for the project was dissipated in the face of more severe problems or whether that support was never really as strong as the CPTED planners had assumed.

Determining the degree of local support before funding a project is a difficult process. On paper, the Broward grant proposal appeared to have strong support by the administration and the School Board. The grant proposal indicated that in-kind support would be forthcoming from the Research Department in the equivalent of one full-time person, at an estimated cost of $32,000; similarly, the proposal indicated that a School Planning person would be provided, without cost, to help support the project at a half-time load. Neither in-kind contribution met the anticipated level of effort.

There is no simple solution to this problem, but it is suggested that maximum attention should be given to eliciting widespread commitment to the project as a locally conceived and locally run effort. In addition, attention should be given

to sustaining and enhancing the initial local commitment throughout the project.

Relationship of Tactics to Crime-Environment Problems

It was found that the demonstration plan had been developed without several sets of crime and fear data, with the result that the appropriateness of several tactics later seemed questionable. It was expected that some of the data -- notably that from the initial fear and victimization survey -- would lead to modifications in the planned tactics. Funding delays and scheduling requirements precluded this. Nevertheless, there never was a plan to incorporate new data on an ongoing basis. Because issues of appropriateness, coordination, scheduling, monitoring, and utilization are likely to arise in all CPTED-type projects, it is strongly recommended that the project plan call for formative as well as summative evaluation. That is, there should be procedures for incorporating emerging information to improve the project as it develops.

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