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ABSTRACT

Guidelines designed to help Maryland facilities planners, educators, and community members make informed choices about the types of facilities they will provide for secondary education services are presented in this document. The guide first describes the characteristics of at-risk students and presents an overview of dropout prevention programs. Specific facilities recommendations are presented for promoting academic achievement, open access, personal development, and career exploration/development. Other factors of school effectiveness to consider are school size and recognition of different learning styles. The rest of the document provides a planning process outline, 14 design and planning references, a checklist of recommendations, square footage requirements, and a model student house and high school designs. One table is included. The appendix contains the 1991 Maryland School Facilities Conference program. (Contains 26 references.) (LMI)

FACILITIES PLANNING GUIDE

FOR

SUCCESSFUL SECONDARY SCHOOLS

Maryland State Department of Education

Office of Administration and Finance

School Facilities Office

March 1991

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ACKNOWLEDGMENTS

The document was initially conceived as a facilities planning guide on alternative programs for disruptive youth. During the 1988-89 school year the planning committee visited more than twenty alternative schools in several states. They collected information on the basic components of the educational programs and evaluated key areas of the facilities. As the final recommendations were compiled, a decision was made to direct the scope of the guideline to cover "traditional" secondary schools in recognition of the intent to provide programs which ensure success for all students.

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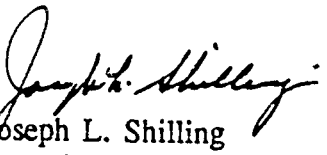
FOREWORD

Insuring successful completion of high school for all students is a primary goal of educators throughout Maryland. While many innovative programs provide early intervention services to young children, a sizable number of students reach secondary school perilously close to dropping out or expulsion. State and local initiatives are proposed to change the traditional secondary school into a more supportive learning environment. School buildings must not restrict the educational changes required. This guide has been prepared to help facilities planners, administrators, teachers, parents, community members, and architects make informed choices about the types of facilities they will provide for the secondary education services needed in the years ahead.



Joseph L. Shilling
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Introduction

The Facilities Planning Guide for Successful Secondary Schools is intended for use by educational administrators, school planners, teachers, parents, community members, and architects charged with the design and construction or renovation of secondary schools.

The guide includes an overview on students at risk and dropout prevention programs, general and specific facilities recommendations, a checklist of options, and design illustrations. It will be most useful in the early phases of a project while existing conditions are evaluated, educational specifications developed, and schematic designs prepared.

Need for School Improvement

Simply stated, too many adolescents drop out of high school unprepared to assume a productive role in the world. Too many of those who do graduate have not mastered the skills they need to succeed in jobs and in college, or to be able to change careers as the economy changes. Too many schools are not educating all of their children to live rewarding lives and to contribute to the nation's well being. Highly publicized national and international studies have documented many failures and raised the specter of state and national decline. The nation's social and economic systems cannot sustain the resulting increasing burdens of public assistance, incarceration, and the loss of human potential. Minorities and the poor are affected, but the problem is not exclusively urban, rural or suburban. In varying degrees it shows up everywhere. The need to improve schools is urgent.

Maryland Initiatives

The Maryland State Department of Education has recently investigated many aspects of the problems in public education and has established a comprehensive plan. Central to the program is school accountability. Beginning in 1990, the public schools will be evaluated against state standards to be met by 1995 and rated "excellent," "satisfactory," or "standard not yet met." Major studies on the middle learning years, vocational-technical education, and students at risk have also been completed.

In 1990 the State Board of Education adopted ten goals and fifteen major strategies for education in Maryland in the year 2000. Many of the strategies have implications for facilities planning of secondary school programs. Among these are proposals to raise compulsory school attendance from age 16 to 18, to increase the use of computers as tools for instruction, to revise graduation requirements, to provide a more flexible school organization than the traditional four year program, to increase parental involvement, to extend the school year from 180 to 200 days, and to enhance programs

in mathematics, science, and technology.

In 1989 the Task Force on the Middle Learning Years completed What Matters in the Middle Grades: Recommendations for Maryland Middle Grades Education. Many of the recommendations have facilities implications. These include grouping two or three classes together, working with volunteers, increasing the number of paraprofessionals in the school, encouraging year-round community activities, providing hands-on labs for science, fine arts, technology education, and computer education, teaching keyboarding skills for all, including theater and dance in the curriculum, using interdisciplinary team teaching, sponsoring intermurals and student clubs, and providing opportunities for awards, assemblies, and displays.

Characteristics of At-Risk Students

Much of the discussion on students at risk focuses on pre-school and elementary school programs. Children who succeed in early school years are thought to carry that success forward through adolescence. Preventive, early childhood programs such as Head Start are generally favored over later remedial programs. Yet, despite continuing efforts directed at young children, many adolescents do drop out.

Who is particularly at risk? Numerous studies have identified characteristics of dropouts. Those most commonly cited are listed below. Many individuals successfully overcome these factors and complete high school.

1. live in an urban area
2. come from low income families
3. score low on achievement tests
4. have repeated at least one grade
5. are over-age when beginning ninth grade
6. have parents who did not complete high school
7. have had school attendance and discipline problems
8. have been suspended, put on probation, or have had serious trouble with the law
9. do not participate in extracurricular activities
10. work fifteen or more hours per week.

In Keeping Students in School, a book on dropout prevention programs, Margaret Terry Orr suggests looking at groups of students according to the causes, likelihood, and status of their dropping out:

1. The first group consists of students who are still in school but who are marginally at risk of dropping out. They are still motivated to graduate from high school, but their low grades and lack of post-high school plans make them candidates for dropping out.

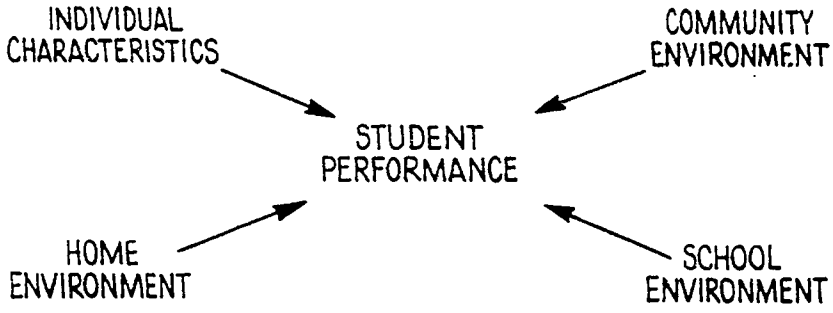
2. The second group consists of those who are interested in staying in school but cannot because of personal circumstances, such as the need to work or the responsibilities of parenthood.
3. The third group consists of students who are at great risk of dropping out, as evidenced by their lack of interest, poor attendance, and poor academic performance.
4. The fourth group consists of students who have already left school but need services to complete their education and prepare for employment. Returning to a traditional, daytime high school program is probably not an option, but obtaining basic-skills training and preparing for the GED are possible.

Why do students move from marginal performance (group one) to substandard performance (group three) to withdrawal (group four)?

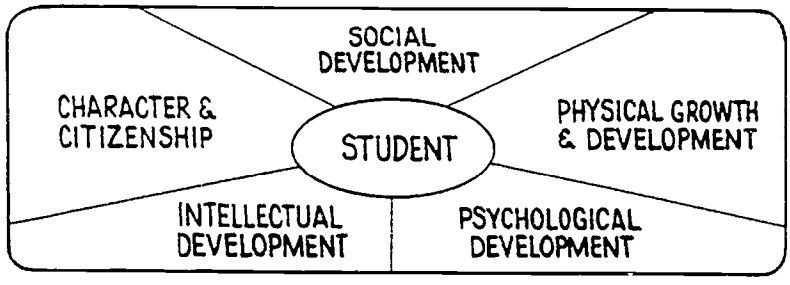
Research into alternative schools by Gary Wehlage, and others at the National Center on Effective Secondary Schools at the University of Wisconsin-Madison, suggests that these characteristics are symptoms of the student's disengagement from school. "Failure for most students is better seen as a process of mutual rejection by the student and the school." Applying Hirschi's theory of social bonding, Wehlage has suggested centering prevention efforts on school membership defined in terms of social bonding criteria: attachment, commitment, involvement, and belief. The active commitment to membership begins with an assumption of reciprocity between adults and students and requires warm personal relations between them. Educator Theodore Sizer in Horace's Compromise, The Dilemma of the American High School also writes extensively on the disengagement of marginal as well as successful American students. He describes a minimalist conspiracy in effect in many schools. The students will be generally orderly but passive and the teachers will lecture and give tests on material the students expect. The revitalized education system advocated by Sizer requires students to be actively engaged in their own learning with teachers playing the role of coach. Both writers conclude it is the interaction of the characteristics of the students and the institutional characteristics of the school which result in disengagement. It is the facility planner's responsibility to design the school building to promote engagement and feelings of membership.

School Reform and Dropout Prevention

Schools can help all youth - at risk or not - to acquire a personal sense of competence and success, to develop a sense of identity and social integration, and to acquire the social knowledge and skills that make an individual a good worker, parent, and citizen. Efforts to retain at-risk students must recognize these fundamental goals as well as respond to these students' more particular needs. The diversity of those individual needs should not be underestimated.

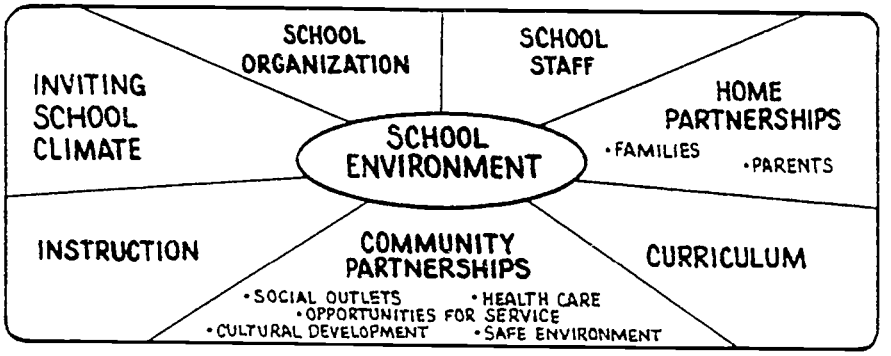


Major reforms in teaching, curriculum, and social relations between adults and students are needed to reduce the number of dropouts and promote achievement for at-risk youth. To be successful, school programs must help students overcome isolation and alienation, help them succeed in school, and develop an interest in continued learning. Programs must begin to assess their students' developmental characteristics as they affect their ability to learn and succeed in school at the present time and also foster a sense of belonging to the school community.



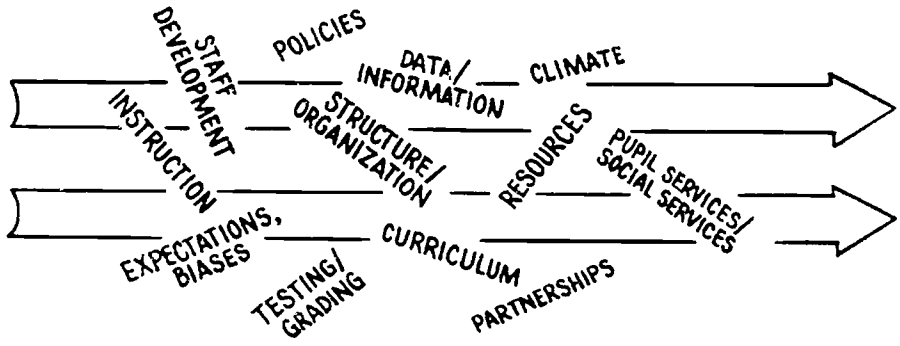
Part of this effort requires a safe and secure school environment which supports healthy development. In Maryland, programs aimed at reducing the number of incidents of serious student misbehavior have been underway for over a decade. Each program varies in nature and objectives according to the student needs or the diagnosed causes of the disruption. The three levels of service provided are (A.) long term direct

interventions (alternative schools or classrooms) (B.) short term direct intervention (timeout rooms, in-school suspension centers) and (C.) long term indirect interventions (staff development, technical support of teachers). A recent report to the State Board reviewed these programs. Historically, Level A programs received first funding and were the first line of defense in reducing student disruption. Despite success with individual students at the centers, many students who returned to the home school environment needed counseling support and special assistance in coping with the regular education environment. Level B programs such as in-school suspension and crisis/adjustment centers provided similar data. Although out-of-school suspensions decreased, the number of disruptive incidents did not unless direct counseling services were also available to deal with the student causes of disruption. These kinds of Level B programs point to the need for extended pupil services programs.



Level A and B programs highlight a growing need to evaluate the educational environments of schools which can contribute to disrupting a student. Level C programs were designed to deal with the total school environmental factors by working with teachers, administrators, and school teams. The more effective Level C programs provide new instructional knowledge through staff training; build trust relationships onsite; use student data to diagnose need; provide an outside change agent; use teams to access resources and build strategic plans; and use teams to monitor and evaluate implementation. The report concludes that program interventions must respond to data-supported causes of disruption in the local school.

The educational forces contributing to student disruption must be addressed first (Level C) before complete diagnosis of individual needs can occur (Levels A and B).



Nationally there have been three general approaches to serving dropouts or potential dropouts: compensatory education, alternative education, and employment and training programs. No single service system is primarily responsible for serving the youth dropout population, although it is often presumed that the schools are. Collaborative efforts by school systems, economic development training programs, the juvenile court systems, health departments, and other public and private agencies are required for services to be comprehensively addressed within communities.

Programs and services at the secondary level range from the simple to the complex.

1. Supplemental Services - limited counseling and job readiness preparation to marginally performing students.

2. Removal of Barriers to Continued Education - programs for youth whose economic, family or personal responsibilities keep them out of school; i.e. a school-based daycare center for teenage mothers.

3. Comprehensive School Programs - intensive, early intervention, multi-service approach of education, employment preparation, and counseling to address academic and attendance problems; i.e. summer enrichment course for entering ninth graders.

4. Services for Out-of-School Youth - basic skills training and GED preparation for youth who probably will not reenter school.

5. School System Approaches - targeted and general strategies within a school district including alternative programs and consideration of ways to restructure the schools. (Maryland's Level A,B,C disruptive youth programs)

6. City, County, or Regional Approaches - programs drawing on resources of businesses, universities, and other social service agencies.

The basic content of the programs falls into four areas: (1) basic academic skills, (2) supportive services to remove economic or family barriers to schooling (3) opportunities and guidance on personal development to make the transition from child to adult and (4) exposure to the experiences and expectations of the working world.

Taking a lesson from successful alternate school programs of the past twenty years, the following elements are considered to be essential to a changed school delivery system, a sense of school belonging, and academic achievement.

- A personalized environment that generates a strong sense of loyalty and affiliation with the school community;
- Choice of program membership that acknowledges student and teacher preference;
- Variation of instructional pace, topics, and activity to sustain stimulation, motivation, and engagement;
- Early and frequent academic success in meeting real challenges to counter loss of confidence from previous failures;
- Interdisciplinary curriculum organized around topics, issues, and problems to help students establish connections between their personal concerns and the public world;
- Small group and individualized learning, including cooperative and interdependent activities to balance whole class instruction;
- Personal development learning (self-knowledge, awareness) in greater proportion to academic learning than is typical of traditional education;
- District support for staff to design different school climates, curricula, evaluations, and activities so that alternatives do not replicate the conditions for failure.

Table I summarizes the features of the educational system and the strategies and programs which are proposed or in place in many school systems to deal with the four greatest areas of need.

Table 1

Academic Achievement

Features of Educational System	*Programs*
1. assesses the achievement of students as a school goal	a. computer assisted instruction
2. offers rigorous and engaging programs of study	b. small group instruction
3. recognizes individual learning styles	c. cooperative learning among small groups of students
4. provides students with early & frequent success	d. peer and/or professional tutoring in schools
5. assumes high and consistent expectations of students	e. use of more than one kind of instructional material
6. attracts, develops & retains high quality, well prepared personnel	f. hands on learning experiences
7. encourages sound classroom management	g. independent study projects
8. encourages collegiality and collaboration among teachers	h. pull-in and/or pull-out programs for remediation and enhancement
9. authorizes local decision making	i. revised graduation requirements and elimination of "general" course of study
10. assesses the performance of teachers and administrators	j. higher age of compulsory school attendance
	k. longer school year
	l. summer enrichment programs, after-school programs
	m. gifted and talented programs
	n. schools within schools, magnet schools
	o. staff training and development
	p. teacher teams and team planning time
	q. equitable funding formulas - alternative funding solutions

Removing Barriers

Features of Educational System	*Programs*
1. provides comprehensive, coordinated, integrated support services to ensure fundamental needs (food, shelter, clothing, health care, and transportation) are satisfied	a. parent information and training centers
2. recognizes individual needs	b. flexible school day/calendar
3. promotes parent and community involvement	c. evening high schools
4. provides safe and stable school environment	d. summer school programs
5. provides equity in programs and services	e. school-based programs to prevent drug abuse and violence
	f. infant & child care centers for teen parents
	g. health care clinics/family planning services
	h. disruptive youth programs

Personal Development

Feature of Educational System	*Programs*
1. provides support services to meet emotional needs	a. individual/family/group counseling programs
2. provides opportunities for adolescents to act independently	b. crisis intervention programs
3. provides consistent and fair discipline in school and encourages the same at home	c. behavior modification programs
4. provides the adolescent with adult role models and appropriate supervision, guidance, and support	d. health education programs
5. provides exposure to other races, cultures, and "life styles"	e programs to train new parents
	f. flexible school organization & groupings
	g. school clubs & activities
	h. attendance monitoring and follow-up
	i. physical education, athletics, and recreation programs

Career Exploration and Development

Features of Educational System	*Programs*
1. exposes students to careers and the "world of work"	a. career assessment
2. prepares students to meet employers' expectations	b. career exploration
3. assesses student aptitudes and interests	c. career development
4. provides education to develop marketable skills	d. cooperative work experience
5. integrates academics into vocational programs	e. partnerships with local businesses and industries
	f. tech prep (2+2) programs with community colleges

Facilities Recommendations

Elementary school buildings have changed considerably in the last ten years to reflect changed and additional programs. Many now include additional rooms for compensatory and remedial education services, special education, guidance counseling, pre-kindergarten classes, computers, parent volunteers, expanded health care services, gifted and talented programs, before and after school day-care, school breakfast programs, and more.

Middle and high schools have been slower to change. School facilities planners and designers have generally relied on a strict disciplinary organization in secondary schools. Some middle schools are organized by grade levels with more specialized classrooms clustered together. All the sixth or seventh or eighth graders are housed and scheduled together. For a high school it is a straight-forward process given a set curriculum, so many periods a day, and so many students and teachers to apply standard utilization factors and calculate the number of classrooms and laboratories needed. Common administrative support facilities are also standardized. Classrooms are grouped by academic discipline and students are expected to criss-cross the building many times each day to reach them.

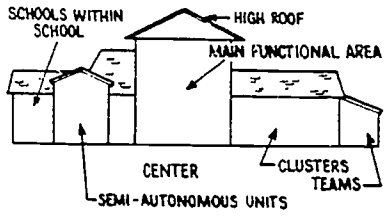
The high school of 2000 will be more difficult to plan. The school reform movement and state goals will enable each school system to develop in its own way. The administrative and teaching organization may vary slightly or substantially from school to school within the district. Demographically, the student body is likely to include a wider age range and a more diverse population. Schedules may be individualized. Instructional groupings may create a wide range of class sizes each day.

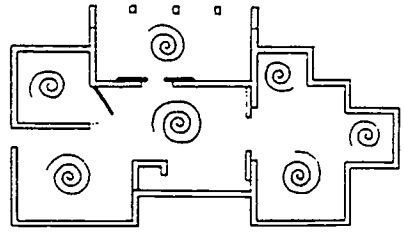
If we are serious about addressing the interaction between the adults and students and nurturing the sense of school membership, the kinds of spaces and the relationship between them will also require changes.

The facilities below are necessary in a school to support the strategies and programs needed for success for all students. They are divided into the four basic content areas - academic achievement, removing barriers, personal development, and career exploration and development. Illustrations in this section are based on A Pattern Language by Christopher Alexander and others.

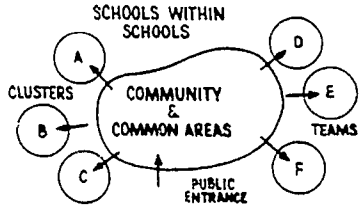
A. Academic Achievement

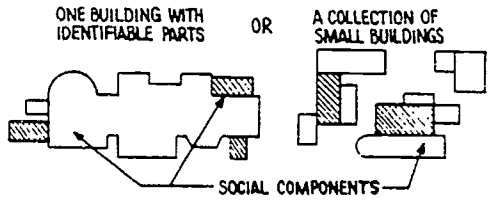
1. Each room in the school must be designed to respond to the physical and emotional needs of the people who will use it. Architectural variables such as natural light, proportions, shelter, privacy, and beauty must be addressed. The layout must respond to functional needs in terms of social groupings and instructional methods. The social spaces should determine the structural elements of the school.



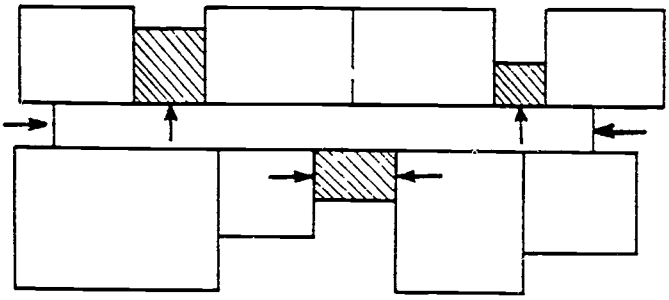


2. The building should be divided into self-contained areas to reflect the organizational clusters of the school, be they "schools within a school," "houses," "teams," or "magnets."

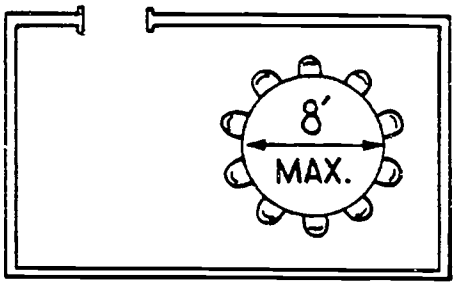




3. The school must provide rooms for a wide range of instructional groupings. This would vary from individual study carrels, seminar rooms, classrooms to lecture halls.

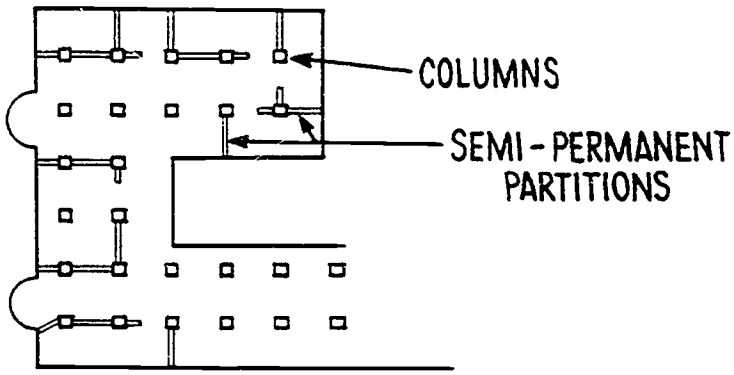


4. A sufficient number of small rooms for more private individual or small group work should be scattered conveniently throughout the school. Small class/meeting rooms (for 12 or less) evenly distributed throughout the school encourage group interaction not possible in larger settings.



5. Classrooms must be large enough to accommodate "pull in" resource teachers, computer stations, alternate furniture arrangements, and audio/visual equipment.

6. The school must be flexible. The organization and programs of the school are guaranteed to change. Flexibility exists when contained rooms of various sizes and degrees of intimacy are available for reassignment and use. Movable partitions are useful in a small number of situations. A structural grid of columns which can be filled in or opened up as needs change can work well over time. The designer must provide mechanisms for future alterations.

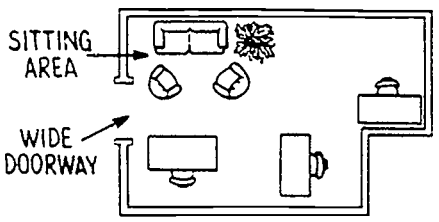


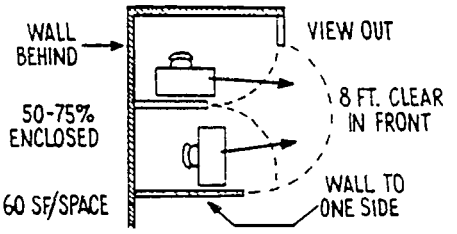
7. The school must support computer-assisted instruction and other technologies. Students and staff must have access to hardware in labs, classrooms, offices, and libraries. The increasing availability of home computers should be anticipated.

8. All laboratories must have up-to-date equipment. In some cases programs may be offered off campus in industrial or business facilities.

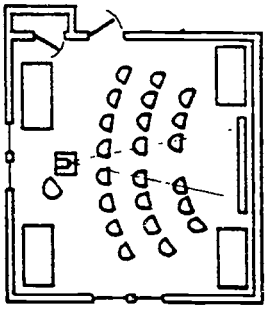
9. The school must be planned to allow teachers and students full use of a wide range of instructional equipment. Most items should be out and in use, not stored away. Lighting, display surfaces, and power supplies must be convenient and adequate.

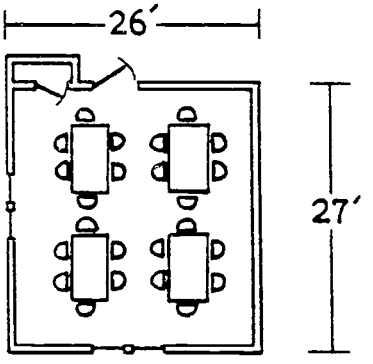
10. Administrative and academic work areas must use appropriate technology to enhance communication within the school and with parents and the community. Items such as photocopiers, automated telephone systems, computer networks, modems, facsimile machines, and desktop publishing systems must be provided. Teachers need a comfortable and professional work space. Avoid closed-off administrative support/faculty offices to balance privacy and interaction.





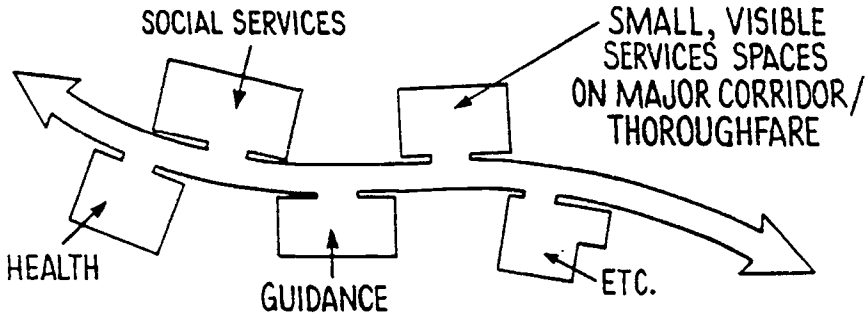
11. Fully equipped meeting rooms must be provided for teaching teams, parent workshops, and staff development training sessions. Allow approximately 25-30 square feet per person and provide small worktables, upholstered swivel chairs, audio-visual equipment,computers, etc.





B. Removing Barriers

1. The school must provide facilities to enable students to have immediate access to social services and counseling. Small rooms must be available for one-on-one, private meetings. Telephones must link people and services. Rooms should be convenient for students.



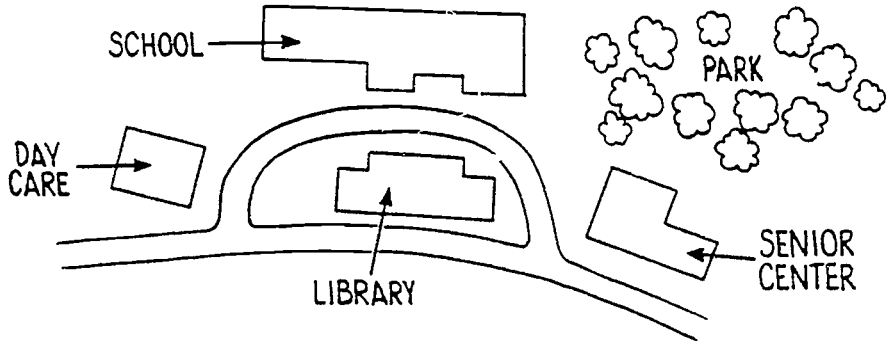
2. Depending on the local climate, the likelihood of an extended school year and numerous summer programs may require the school to be fully air-conditioned.

3. The school must be designed so sections of the building can be operated independently at different times of the day. Entrances, exits, rest rooms, and heating, ventilating and air conditioning must be provided in limited areas while the remainder of the building is closed.

4. Social service agencies must be provided with space in or near the school for infant and child care, health care clinics, and caseworker or parole officer contacts. Consider offices in the school, modular buildings on the site, or other options. Provide staff and client parking.

5. The school must be located on the public transportation network where possible to allow students, parents, and the community access.

6. Combining the school with community facilities such as public libraries, county recreation centers, or senior citizen centers should be considered.

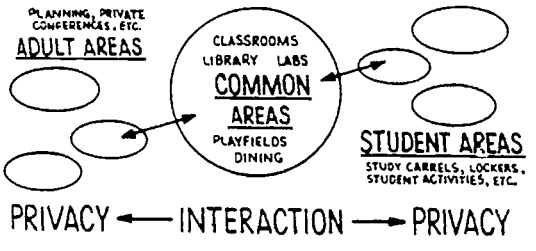


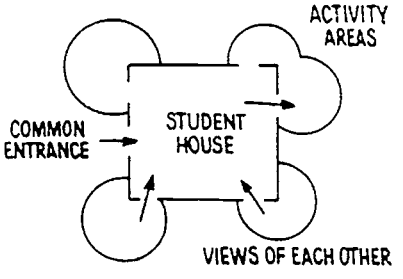
7. Extended use of the school will mean less time available for general maintenance and renovation. All construction and finish materials must be selected to be durable and easy to maintain. Materials must wear well.

8. Security considerations must be based on an understanding of the neighborhood and school crime characteristics. Security measures should include appropriate hardware, monitoring, observation points, and creation of a sense of territory.

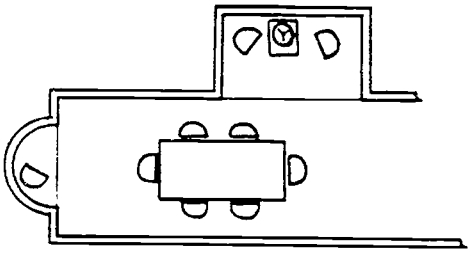
C. Personal Development

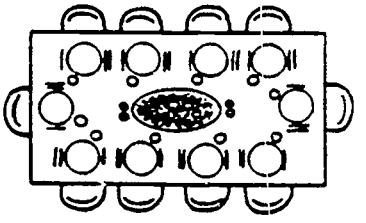
1. Adults and teenagers each need an area to call their own in the school and a common area where they work, study, and relax together. The relationships among the rooms in the school must be defined to provide an appropriate balance between staff, student, and shared spaces. There should be private teacher rooms students do not enter as well as student activity areas where students are predominant.





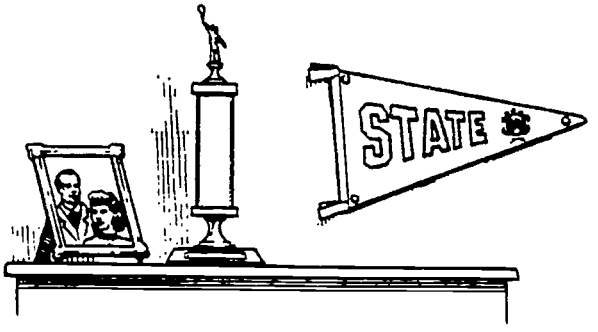
2. Provide informal settings which encourage informal interaction and frequent daily conversation among teachers, students, and staff (i.e. lounges, commons, dining areas, lobbies, bus stops, game room). Alcoves can provide a space for a degree of privacy in small areas at the edge of common rooms for 1 or 2 people to talk or work together. Regular meals around a table for a small group can support bonding and a sense of belonging. Encourage the house members to eat together.



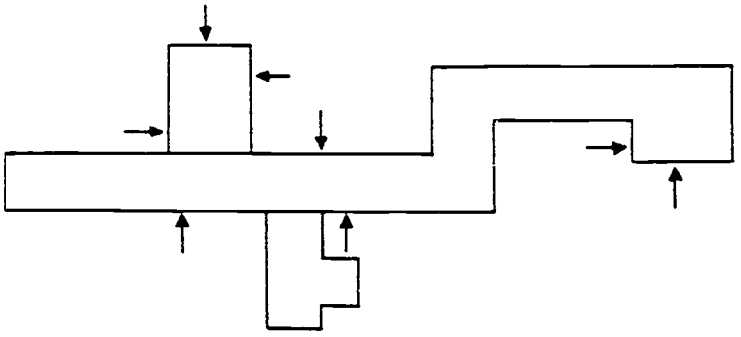


3. Provide student activity areas for teen-centered projects, clubs, and publications. Locate the adults nearby to offer guidance and supervision but make the activity area a student space with opportunities for students to decorate and rearrange as they decide.

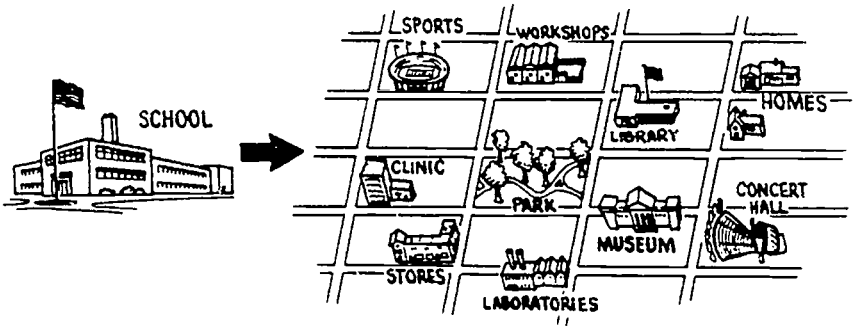
4. Use the building to create a sense of ownership for students and staff through design elements such as entrances, boundaries, and private spaces. Consider involving students routinely in the operation and maintenance of their school. Provide opportunities for students and staff to respond to their instinct to decorate. Develop simple design themes and apply ornament to edges and boundaries. Humanize work areas, classrooms, locker areas by providing display boards, cabinets, and tack surfaces for staff and student use.



5. The school should be designed to conserve energy and protect the environment. Passive and active methods of energy conservation should be considered. Long, narrow wings allow maximum natural light and ventilation into the building. Ideally provide natural light from two sides of major rooms. Balance energy conservation, indoor air quality and construction needs. The need for recycling centers and other initiatives should be anticipated.

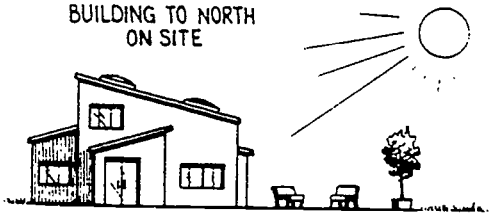


6. The school and community together must offer appropriate facilities and opportunities to develop the "total child" - artistic, musical, physical, domestic, mechanical, as well as academic. Provide a broad curriculum but do not expect the school to provide all facilities for all students. A school is one resource among many in a community. Plan the building in conjunction with other public and private facilities. Develop shared use agreements and partnerships.



7. Use the latest technology to communicate with parents so successes and problems are addressed as soon as possible.

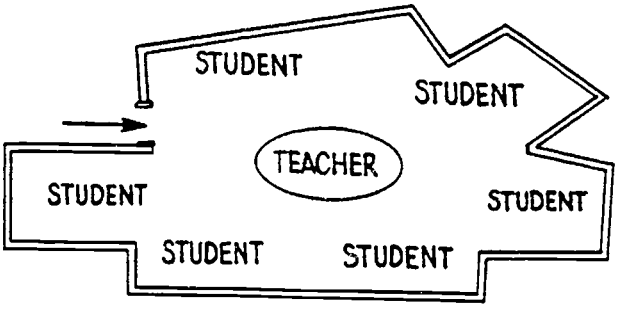
8. Teenagers need physical activity. Make movement an informal, natural part of the day with wide places, byways, free zones and provide more formal sports and recreation areas. Choose a variety of chairs and adjustable models to accommodate people of different sizes in different positions. Seating comfort is important for adults and youths. Also specify a variety of tables and desks to respond to personal preferences. Provide informal outdoor gathering places and remember people only use sunny outdoor space.



D. Career Exploration and Development

1. Provide well-equipped space for students to work on real projects and learn marketable skills.

2. Provide classrooms and laboratories for assessing and developing career interests, aptitudes, and skills. Arrange work stations around common meeting space.



3. Provide space for job interviewers and other local business representatives to meet with students and teachers.

4. Provide access to up-to-date equipment and supplies as used in industry and business. Provide opportunities for students to work at the side of skilled teachers/crafts people.

5. Provide space for cooperative work experience program coordinators to coach students on work place readiness skills.

School Size

The question of the best size for schools has been debated by educators, parents, and boards of education for decades. Somewhere among academic performance, program offerings, operating and capital costs, there is a balance point. Each district weighs the factors and sets its own parameters. Traditionally, the high schools thought to be most effective are large enough to offer comprehensive, diversified programs and facilities.

Nevertheless, the alternative school movement and recent sociological data argue for small high schools. In large schools, students and teachers can be psychologically distant from each other, and average students are often overlooked. It is more difficult to create the sense of "belonging" necessary to success. Educators Gregory and Smith in High Schools as Communities: The Small School Revisited recommend a high school size of no more than 250 students. They argue that larger enrollments result in preoccupation with control and order. The resulting anonymity works against the objective of sharing ideas and working together for both teachers and students. Public perceptions and attitudes also influence the effectiveness of a school. In an article on district and school size, Ornstein observes that given an option for their children to attend a small or large school, most parents would opt for the smaller school. "Large" appears to connote a "less satisfying" school experience.

There is general consensus that most effective secondary programs specifically developed for students at risk of dropping out of high school are characterized by small class size, small program size, and small school size. Theodore Sizer notes that while "the evidence about size of school is inconclusive, more important than sheer numbers is density, the traffic patterns that people use, and the organization of the school. Some big schools "feel" small, and it is the small feeling that is important. The student wants to be someone, wants a name, wants to be helped to become an individual rather than be just another unit of potential output. Likewise, teachers want to be more than cogs in a big wheel. The best of them want a group of students small enough to get to know and a corps of colleagues close enough for intense collaboration. Such hopes and expectations are proper, as schools should not be in the business of stamping out clones. One needs a feeling of intimacy in order to be the individual one wants to be."

For programmatic institutional and physical reasons, it is not realistic to think that Maryland's school districts, among the largest in the country, would convert to small, independent high schools, supportive and successful as they may be in theory. So we must look for reforms within the larger whole. One approach to increasing the interaction and opportunities for students in large schools is to divide the school into smaller units.

At the middle school level this can be accomplished by disbanding departments and structuring the school into groups of three to five teachers working with 75 to 120 students on a set academic core including science, math, language arts, social science, and special education. Three quarters of the day is spent with the team, so the teachers get to know the students' needs and have the flexibility to respond. The remaining quarter of the day is used for individual teacher and team planning and for exploratory courses in music, art, home economics, industrial technology, and physical education.

At the senior high school level a number of approaches are possible. Some schools have established programs for ninth graders providing academic and counseling components in a block of classrooms. Some schools offer magnet programs with most of the classes in one wing of the building.

What these approaches often lack is a truly independent administration and a physical setting clearly belonging to the "house" or "school within a school." While it is possible to designate one wing or block of classrooms as an administrative unit, without a degree of physical separation, independence, and privacy, students and staff will not make the emotional shift from large to small, from impersonal to personal.

How large should a "school within a school" be? Principals of alternative schools say 60-100 students is best for them. They can get to know all the students and the staff can become true colleagues. One goal of Sizer's Coalition of Essential Schools is to have each group of teachers work with only 80 students. Teachers are expected to teach subjects in an integrated - discipline way and to provide appropriate counseling and supportive services. The trade off for broader responsibilities is the smaller student-teacher ratio and thus a more personalized - smaller - environment.

Alternatively, the sub-group could be organized around any number of education programs based on the needs of the students, the school, and the district. Programs might be homogeneous · remedial, enrichment, vocational, advanced academic, behavior modification, or foreign language immersion. They could also be heterogeneous slices of the total school population studying a basic curriculum as Sizer suggests.

Learning Styles

One of the most practical education theories to gain current favor is learning styles-based programs. These programs recognize that individuals learn best in different ways. Understanding these differences helps the student learn and the teacher convey the material more effectively.

Many people find it easier to learn when they can read or view or manipulate an object, yet much classroom instruction asks the student simply to listen to a teacher. Schools and teachers which use a learning styles approach provide teaching and studying options to respond to psychological characteristics, social preferences, and environmental needs of the students.

Some people are more alert at different times of day. Some individuals prefer working alone, others do better in a pair or with a small group. Others may choose to work directly with a teacher. People have varying needs for movement, for heating, for cooling, and especially for different sitting posture positions.

Teachers must spend enough time with each student to recognize differences in learning styles and coach appropriately. The class period and school day must be adaptable to respond. Students can have the option to take classes at different times or core classes can be rotated weekly to give everyone exposure to difficult subjects at their "best" time. The classroom and school building must accommodate the variable instructional techniques and groupings required each hour of the day.

With some effort by teachers to develop more varied assignment options, to create more tactile materials, and to rearrange furniture, learning-styles approaches can be implemented at little or no added cost. Beyond the benefits to students, many teachers report renewed enthusiasm and energy.

There is no one perfect class size for an effective secondary school. Some subjects are best presented in lecture to a group of 50 students; other topics are best taught in a seminar with a discussion group of 5 or 6 seated around a table or as recitation between teacher and student in a group of 20. Each teaching team has to have the flexibility to arrange and rearrange the students to meet the needs of the curriculum and the needs of the individual learner. Teachers must be willing to acknowledge their individual weaknesses to each other and share ideas and techniques. Students must be willing to do more than sit back passively and listen. They must be fully engaged in the topic to learn anything. Some retraining and encouragement for both groups is required.

Planning Process Outline

The facility planning process for a new secondary school or a major renovation typically requires at least five years after authorization to proceed. Working its way up the capital budget priority list can take a project many more years. The major steps in the process are listed below. Once completed a school is expected to operate for 15-25 years before major architectural and mechanical changes are made.

Year	Step	Activity
1	1	Identify need for the project in 5 year Facilities Master Plan.
	2	Prepare Capital Improvement Program for planning funds.
	3	Obtain approval and funding for planning.
	4	Establish the facility planning committee of educators, administrators, parents, community representatives, students, professional planners.
	5	Prepare educational specifications for the project.
	6	Approve educational specifications
	7	Select and appoint the project architect.
2	8	Architect prepares schematic drawings.
	9	Schematics approved.
	10	Architect prepares design development documents.
	11	Design development documents approved.
	12	Obtain approval and funding for construction
	13	Architect prepares construction documents.
	14	Architect and/or district prepares furniture and equipment list and layouts.
	15	Construction documents approved.
	16	Advertise construction bid documents.
	17	Analyze construction bid including built-in furniture and/or equipment.
3	18	Award Construction contract.
	19	Start Construction.
	20	Obtain approval and funding for movable furniture & equipment.
	21	Advertise furniture and equipment contracts.
	22	Analyze furniture and equipment bids.
	23	Award furniture and equipment contracts.
	24	Monitor construction progress and furniture and equipment contracts.
	25	Make final check of construction project and movable furniture and equipment.
4.5 - 5	26	Open school.
	27	In-service and orientation program.
	28	Evaluation by users.
	30	Feedback.
	31	Implement recommended changes in educational specifications for future projects.

Design and Planning References

The school planner and the architect should be familiar with a number of technical references which will influence the design of the school. Among these are:

Administrative Procedures Guide, Public School Construction Program, State of Maryland, September 1983.

NFPA 101, Life Safety Code, National Fire Protection Association, 1988.

ANSI A117.1-1986, American National Standard for buildings and facilities - providing accessibility and usability for physically handicapped people, American National Standards Institute, 1986, and Uniform Federal Accessibility Standards.

Facilities for Special Education Services, Council for Exceptional Children, 1979.

Assistive Devices in Public Schools Which Aid the Understanding of Verbal Language, Maryland State Department of Education, March 1986.

Indoor Air Quality, Maryland Public Schools, Maryland State Department of Education, November 1987.

Indoor Air Quality Management Program, Anne Arundel County Public Schools, March 1989.

Model Educational Specifications for Technology in Schools, Maryland State Department of Education, 1991.

Vocational Program Standard Specifications (Secondary Level), Maryland State Department of Education, 1988.

School Food Service Facilities Guidelines, Maryland State Department of Education, 1976.

Standards for School Library Media Programs in Maryland, Maryland State Department of Education, 1986.

Maryland School Science Facilities Guidelines, Maryland State Department of Education, 1977.

Local school system design, construction, maintenance standards.

County building codes.

In addition, professional staff at the Maryland State Department of Education are available to consult and assist local school board staff during all phases of project development and design. (301) 333-2000.

Checklist of Recommendations for Successful Secondary Schools

Yes	No		
—	—	1.	The general instructional area is divided into recognizable "houses".
—	—	2.	Each house has a recognizable entrance and boundaries.
—	—	3.	Each house has a student area, a teachers area, and areas for informal interaction.
—	—	4.	Each house has its own administrative work space, dining area/lounge, and restrooms.
—	—	5.	Each house has a mix of teaching spaces from individual to large group.
—	—	6.	Each house has convenient access to small meeting rooms.
—	—	7.	Each house can accommodate pull-in programs and supplemental work stations in classrooms or common space alcoves.
—	—	8.	Each house has convenient access to and use of a full range of instructional equipment.
—	—	9.	Lighting can be controlled and power is available where needed.
—	—	10.	The school is fully networked for computer-assisted instruction.
—	—	11.	The school is fully networked for computer-assisted management.
—	—	12.	The school has large, fully equipped meeting rooms suitable for student and adult workshops and training programs.
—	—	13.	Specialized teaching laboratories in the school have up-to-date equipment and meet current safety standards.
—	—	14.	Mechanical and security systems are designed so sections of the school can be operated independently including individual houses, gymnasiums, auditoriums, libraries, and child care centers.
—	—	15.	The school is air conditioned in whole or part.
—	—	16.	Operations and maintenance functions are computerized for automatic start up/shutdown and record keeping.

___ ___ 17. The school is constructed of durable, long wearing, low maintenance materials. Restrooms are easy to maintain.

___ ___ 18. All houses and each section of the school have appropriate security devices - locks, gates, alarms, etc.

___ ___ 19. Student activity rooms are provided for clubs, publications, and service organizations in each house.

___ ___ 20. Informal interaction between students and adults is encouraged through the use of shared spaces, such as dining rooms, outdoor activity areas, restrooms, and lounges in each house.

___ ___ 21. The school gives students room to move around naturally.

___ ___ 22. Furniture and equipment accommodate physical preferences and needs.

___ ___ 23. Space is provided in the school or on the site for community and social service agencies facilities.

___ ___ 24. Public transportation is available.

___ ___ 25. Adequate parking is provided for school and community users adjacent to each house.

___ ___ 26. All rooms routinely occupied by students and staff have provisions for natural light and ventilation and a view of the outdoors.

___ ___ 28. The school is designed to conserve energy.

___ ___ 29. All programs are accessible to disabled individuals.

___ ___ 30. The designer has identified ways the building can be changed in the future without major disruption to the educational program.

Square Footage Requirements

Does the call for small meeting rooms, large assembly areas, individual study corners, and "house" clusters mean more space is required in a secondary school? Not if school planners can break free of individual territoriality. If each teacher must have an 800 square foot classroom and each administrator must have a 150 square foot office, then adding the support spaces would increase the size of the school. But if space can be organized by smaller organizational units with common areas shared only by the small group it is possible to work within conventional square foot allowances.

Areas usually combined into large spaces for all teachers or all students (such as lounges, workrooms) would be dispersed throughout the building and applied to each cluster group. Teachers in some subjects would be assigned to specialized class laboratories. Others would share responsibility for and use of the house classrooms, seminar rooms, and support space and be provided with a faculty office area as in higher education. Administrative and counseling functions would be decentralized.

Four space summaries are presented to illustrate the house concept. The summaries are for a 600 student middle school, and for 600, 1200 and 2000 student high schools.

MIDDLE SCHOOL FOR 600 STUDENTS (30 Teaching Stations)

A space summary for a middle school enrolling 600 students (660 design capacity) is shown below. The proposed area is within the size allowance used by the Maryland Public School Construction Program. (660 design capacity x 115 gsf/design capacity = 75,900 gsf.)

Space	No.	Unit Area	Total Area	School Area
STUDENT HOUSE				
Classrooms (3t.s.)	3	750	2,250	
Seminar Room	1	150	150	
Computer Mini-Labs (4 comp.each)	3	100	300	
Teachers Room/Storage	1	600	600	
Guidance/Administration/Conference	1	150	150	
Commons/Lounge (optional t.s.)	1	750	750	
*Restrooms, Student Lockers,	-	-	-	
Outdoor Sitting Area	-	-	-	
Total One Student House: (100 Students, 4-5 Teachers, 1 Guidance/Admin.)			4,200	
TOTAL SIX STUDENT HOUSES:				25,200
CENTRAL AREAS				
Art (1t.s.)	1	1,200	1,200	
Science (4t.s.)	4	1,000	4,000	
Foreign Language (1t.s.)	1	750	750	
Music (2t.s.)	2	1,250	2,500	
Home Economics (1t.s.)	1	1,200	1,200	
Technology Education (1t.s.)	1	2,000	2,000	
Media Center	1	4,500	4,500	
Physical Education (2t.s.)	1	9,000	9,000	
Principal's Office/Recept/Conf.	1	800	800	
Health Services	1	400	400	
Kitchen	1	1,500	1,500	
Cafeteria (200 seats), Stage	1	3,200	3,200	
Receiving/Storage	2	250	500	
TOTAL CENTRAL AREAS:			31,550	31,550
TOTAL NET AREA:		75%		56,750
*SUPPORT SPACES: (restrooms, corridors, wall thicknesses, student lockers, mechanical, etc.)		25%		19,150
TOTAL GROSS AREA:		100%		75,900

HIGH SCHOOL FOR 600 STUDENTS (30 Teaching Stations)

A space summary for a high school enrolling 600 students (660 design capacity) is shown below. The proposed area is within the size allowance used by the Maryland Public School Construction Program. (651 to 700 design capacity = 91,000 gsf)

Space	No.	Unit Area	Total Area	School Area
STUDENT HOUSE				
Classrooms (3t.s.)	3	750	2,250	
Seminar Room	1	150	150	
Computer Mini-Labs (4 comp.each)	3	100	300	
Teachers Room/Storage	1	600	600	
Guidance/Administration/Conference	1	150	150	
Commons/Lounge (optional t.s.)	1	750	750	
*Restrooms, Student Lockers,	-	-	-	
Outdoor Sitting Area	-	-	-	
Total One Student House: (100 Students, 4-5 Teachers, 1 Guidance/Admin.)			4,200	
TOTAL SIX STUDENT HOUSES:				25,200
CENTRAL AREAS				
Art (1t.s.)	1	1,200	1,200	
Science (3t.s.)	3	1,200	3,600	
Auditorium (300 seats)	1	7,000	7,000	
Music (2t.s.)	2	1,250	2,500	
Business Education (1t.s.)	1	1,200	1,200	
Home Economics (1t.s.)	1	1,200	1,200	
Technology Education (1t.s.)	1	2,500	2,500	
General Purpose Classroom (1t.s.)	1	800	800	
Media Center	1	5,000	5,000	
Physical Education (2t.s.)	1	12,000	12,000	
Principal's Office/Recept/Conf.	1	800	800	
Health Services	1	400	400	
Kitchen	1	1,500	1,500	
Cafeteria (200 seats)	1	2,400	2,400	
Receiving/Storage	2	250	500	
TOTAL CENTRAL AREAS:			42,600	42,600
TOTAL NET AREA:		75%		67,800
*SUPPORT SPACES: (restrooms, corridors, wall thicknesses, student lockers, mechanical, etc.)		25%		23,200
TOTAL GROSS AREA:		100%		91,000

HIGH SCHOOL FOR 1200 STUDENTS (61 Teaching Stations)

A space summary for a high school enrolling 1200 students (1320 design capacity) is shown below. The proposed area is within the size allowance used by the Maryland Public School Construction Program. (1320 design capacity x 130 gsf/design capacity = 171,600 gsf)

Space	No.	Unit Area	Total Area	School Area
STUDENT HOUSE				
Classrooms (3t.s.)	3	750	2,250	
Seminar Room	1	150	150	
Computer Mini-Labs (4 comp.each)	3	100	300	
Teachers Room/Storage	1	600	600	
Guidance/Administration/Conference	1	150	150	
Commons/Lounge (optional t.s.)	1	750	750	
*Restrooms, Student Lockers,	-	-	-	
Outdoor Sitting Area	-	-	-	
Total One Academic House: (100 Students, 4-5 Teachers, 1 Guidance/Admin.)			4,200	
TOTAL TWELVE STUDENT HOUSES:				50,400
CENTRAL AREAS				
Art (2t.s.)	2	1,500	3,000	
Science (7t.s.)	7	1,500	10,500	
Auditorium (600 seats)	1	10,000	10,000	
Music (2t.s.)	2	1,500	3,000	
Dance/Theater (1t.s.)	1	750	750	
Business Education (2t.s.)	2	1,200	2,400	
Home Economics (2t.s.)	2	1,500	3,000	
Technology Education (2t.s.)	2	2,500	5,000	
General Purpose Classsrooms (2t.s.)	2	800	1,600	
Media Center	1	6,000	6,000	
Physical Education (5t.s.)	1	20,000	20,000	
Principal's Office/Recept/Conf.	1	1,000	1,000	
Health Services	1	500	500	
Kitchen	1	2,000	2,000	
Cafeteria (400 seats)	1	4,800	4,800	
Receiving/Storage	2	500	1,000	
TOTAL CENTRAL AREAS:			74,550	74,550
TOTAL NET AREA:		73%		124,950
*SUPPORT SPACES: (restrooms, corridors, wall thicknesses, student lockers, mechanical,etc.)		27%		46,650
TOTAL GROSS AREA:		100%		171,600

HIGH SCHOOL FOR 2000 STUDENTS (99 Teaching Stations)

A space summary for a high school enrolling 2000 students (2200 design capacity) is shown below. The proposed area is within the size allowance used by the Maryland Public School Construction Program. (2200 design capacity x 125 gsf/design capacity = 275,000 gsf)

Space	No.	Unit Area	Total Area	School Area
STUDENT HOUSE				
Classrooms (3t.s.)	3	750	2,250	
Seminar Room	1	150	150	
Computer Mini-Labs (4 comp.each)	3	100	300	
Teachers Room/Storage	1	600	600	
Guidance/Administration/Conference	1	150	150	
Commons/Lounge (optional t.s.)	1	750	750	
*Restrooms, Student Lockers,	-	-	-	
Outdoor Sitting Area	-	-	-	
Total One Student House: (100 Students, 4-5 Teachers, 1 Guidance/Admin.)			4,200	
TOTAL TWENTY STUDENT HOUSES:				84,000
CENTRAL AREAS				
Art (4t.s.)	4	1,500	6,000	
Science (12 t.s.)	12	1,500	18,000	
Auditorium (1000 seats)	1	12,500	12,500	
Music (3t.s.)	3	1,500	4,500	
Dance/Theater (2t.s.)	2	1,200	2,400	
Business Education (3t.s.)	3	1,200	3,600	
Home Economics (3t.s.)	3	1,500	4,500	
Technology Education (3t.s.)	3	2,500	7,500	
General Purpose Classrooms (3t.s.)	3	800	2,400	
Media Center	1	9,000	9,000	
Physical Education (6t.s.)	1	24,000	24,000	
Principal's Office/Recept/Conf.	1	2,000	2,000	
Health Services	1	1,000	1,000	
Kitchen	1	2,500	2,500	
Cafeteria (675 seats)	1	8,100	8,100	
Receiving/Storage	3	500	1,500	
TOTAL CENTRAL AREAS:			109,500	109,500
TOTAL NET AREA:		70%		193,500
*SUPPORT SPACES: (restrooms, corridors, wall thicknesses, student lockers, mechanical,etc.)		30%		81,500
TOTAL GROSS AREA:		100%		275,000

Model Student House and High School Designs

The final section of the guide contains schematic designs developed at a workshop in March 1991. Following a morning session on educational recommendations, local school system facilities planners and secondary education supervisors were teamed with accomplished architects to critique designs of three student houses and a school based on the facilities recommendations in this guide. A copy of the program for the conference is included in the appendix. Sixty eight persons attended.

The architects participating were:

Thomas Clark, A.I.A.
Thomas Clark Associates, Architects
College Park, Maryland

R. C. Garcia
SHWC Inc.
Architects/Engineers/Planners
Reston, Virginia

Dwight Douglass, A.I.A.
Probst-Mason, Inc., Architects
Baltimore, Maryland

Steven Parker, A.I.A.
Grimm & Parker, Architects
Greenbelt, Maryland

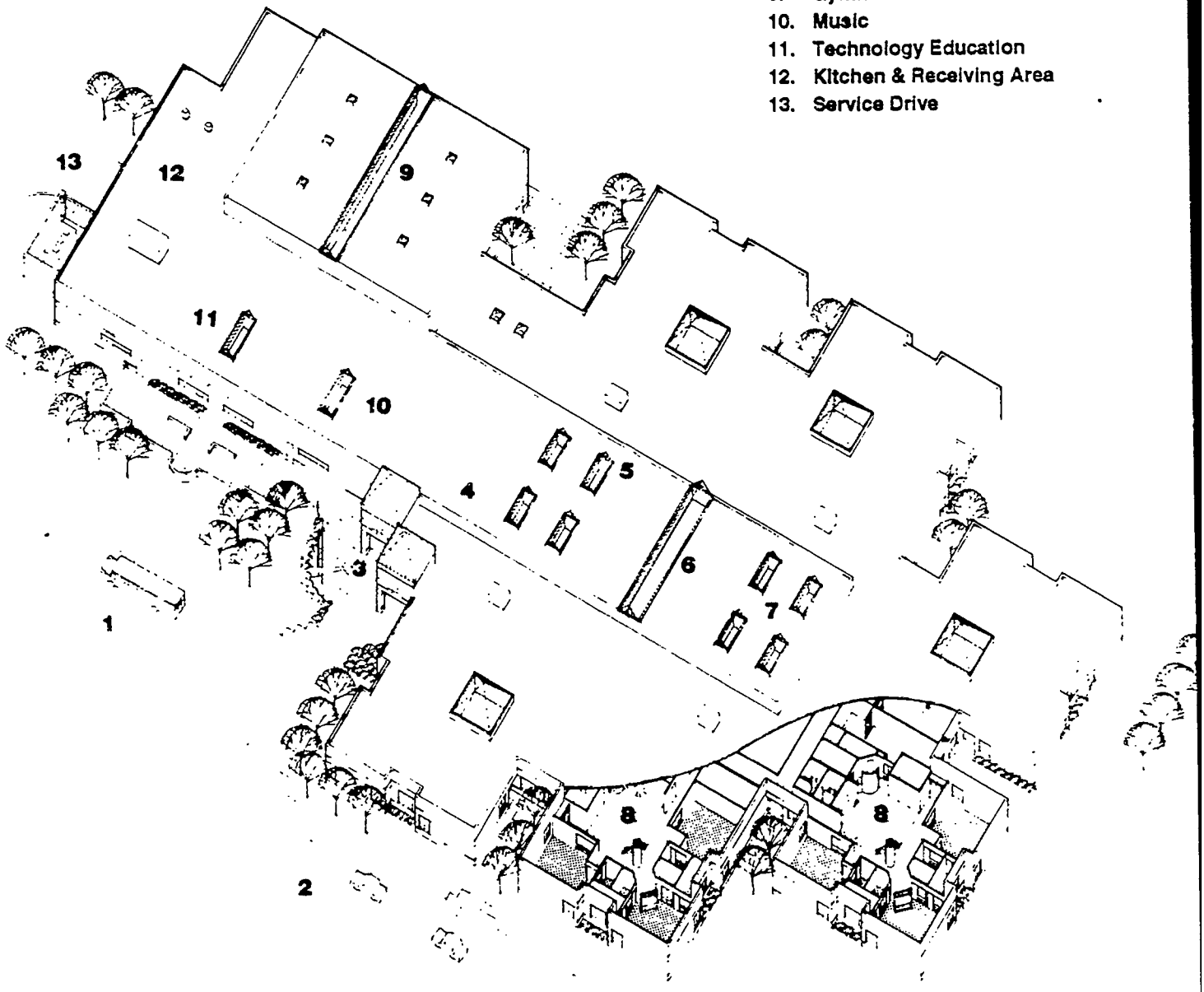
Several weeks before the workshop the architects were sent an outline of educational specifications for the student house or school. They were asked to prepare freehand drawings of a floor plan and an interior or exterior view. Following the critiques at the workshop the architects revised their designs as necessary. Their final schemes are presented on the next pages.

The space summaries were also revised after review by the conference participants. Dining areas originally envisaged in each house were consolidated into a single cafeteria. Addditional general purpose classrooms were added and the number of seminar and computer mini-labs was adjusted.

Overall reaction to the design concept was positive for middle schools but skeptical for high school applications. Concerns about construction and operational costs were raised. The facilities planners expressed a need for strong, clear direction from the instruction and curriculum specialists in their school districts before implementing any major design changes.

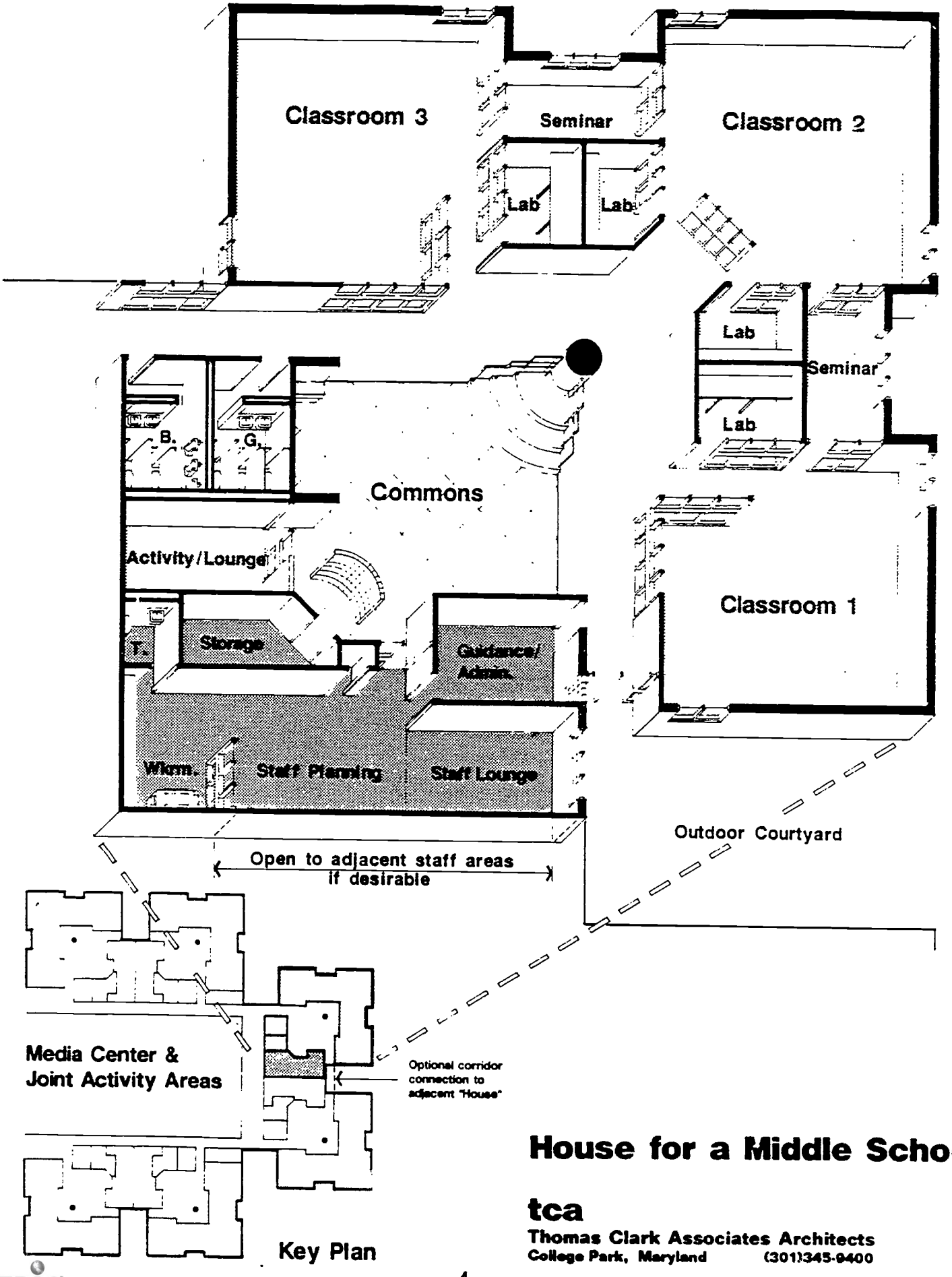
The objective of the conference was to bring together educators and planners to discuss the needs of middle and high school students and to begin the process of designing schools for a changing educational delivery system. The answers are not clear yet, but as we consider alternative school organizations and design concepts we are on our way to solving the problem.

1. School Bus Parking
2. Staff & Visitor Parking
3. Main Entrance
4. Administrative Suite
5. Art, Home Ec., & Central Spaces
6. Media Center
7. Science Labs
8. Student House (Typical of 6)
9. Gymnasium
10. Music
11. Technology Education
12. Kitchen & Receiving Area
13. Service Drive



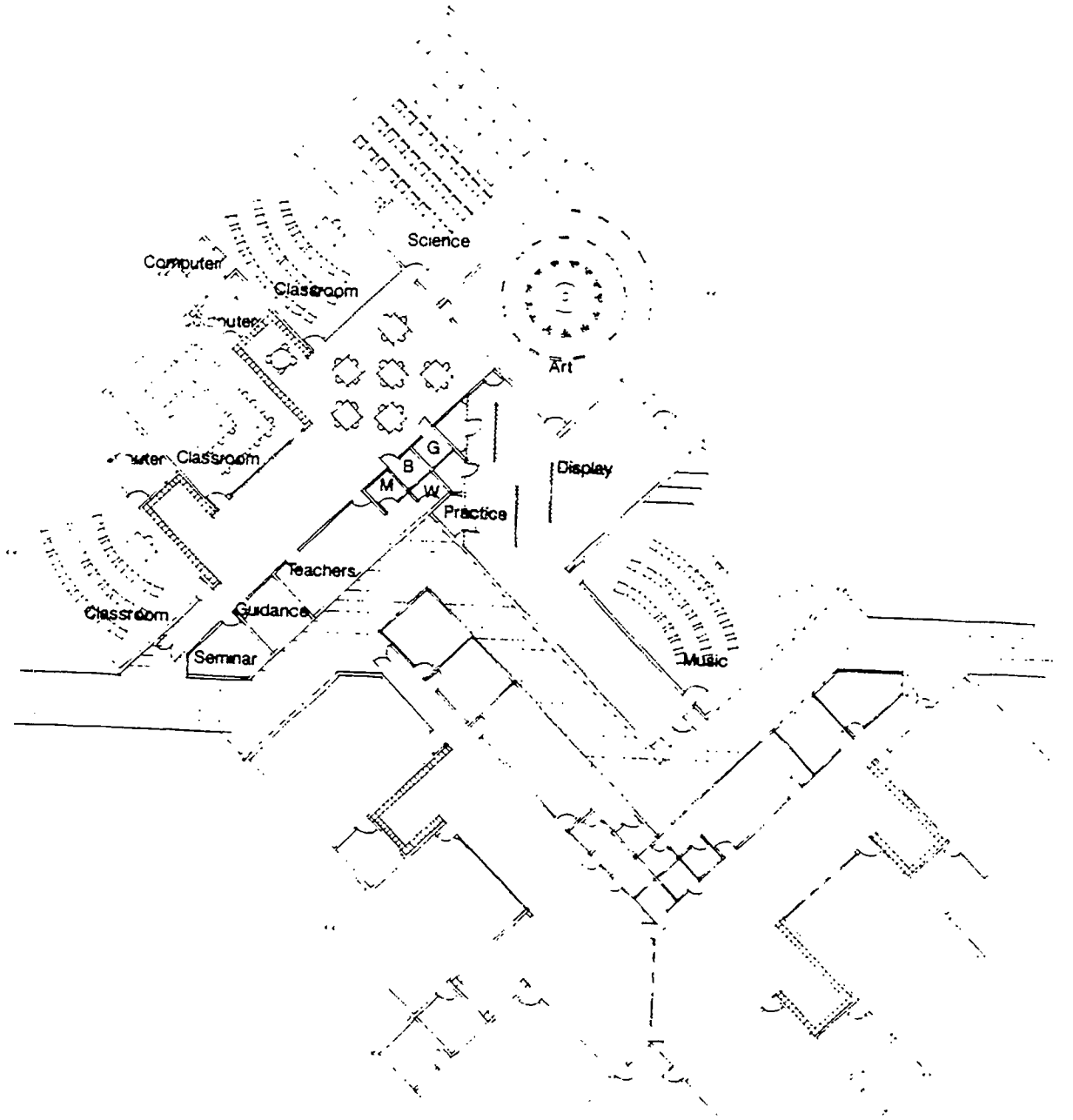
Overall View
Middle School Incorporating the House Concept

tca
Thomas Clark Associates Architects
College Park, Maryland (301)345-9400



House for a Middle School

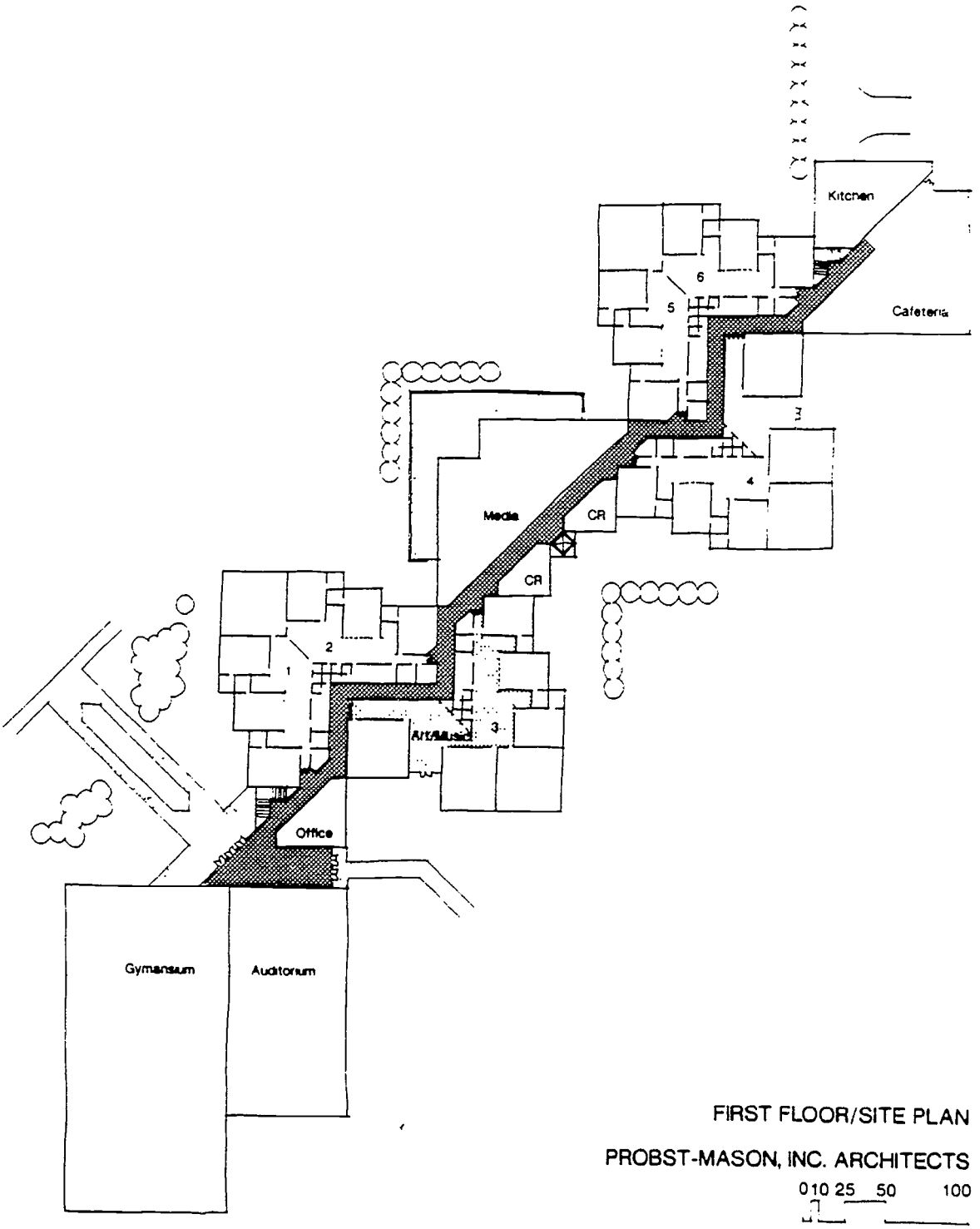
tca
Thomas Clark Associates Architects
College Park, Maryland (301)345-9400



A FINE ARTS HOUSE FOR A
HIGH SCHOOL OF 1200 STUDENTS
For the Maryland State Department of Education

PROBST-MASON, INC. ARCHITECTS

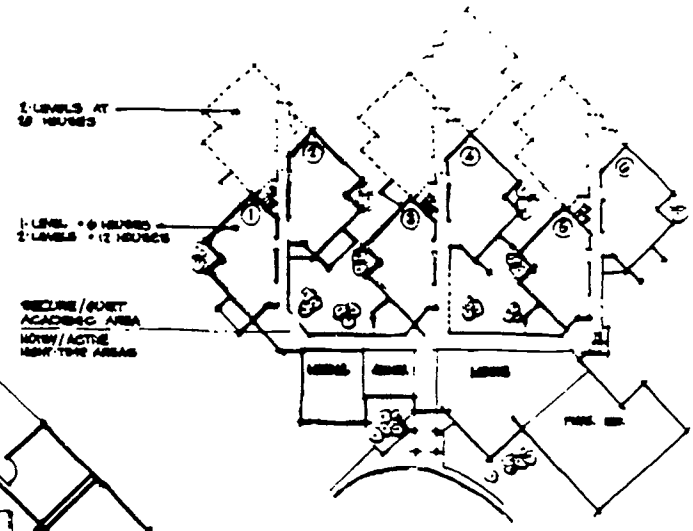
0 5 10 20 40



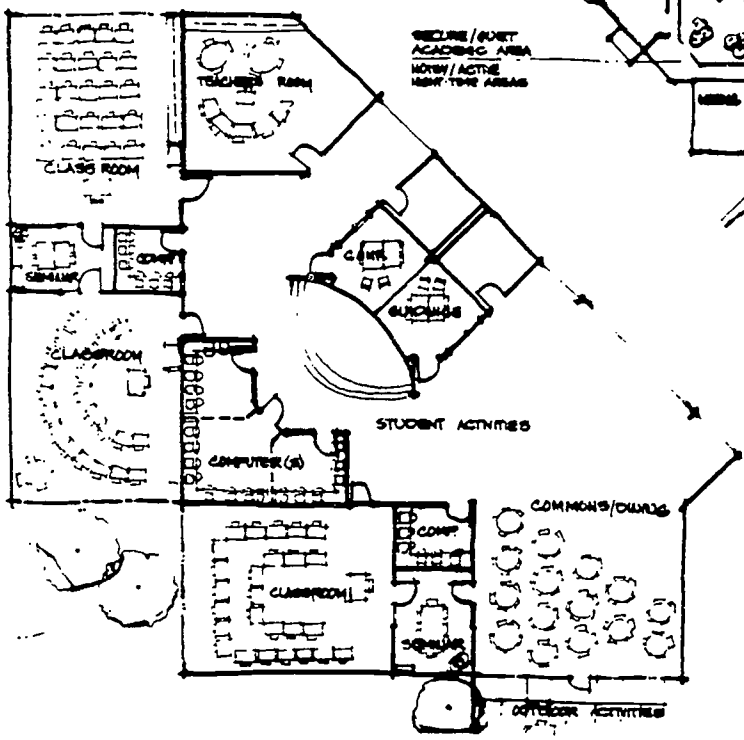
FIRST FLOOR/SITE PLAN

PROBST-MASON, INC. ARCHITECTS

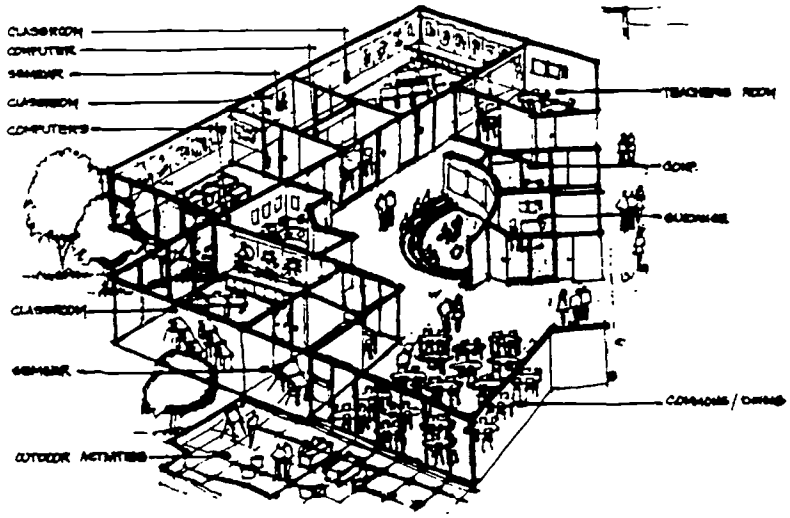
0 10 25 50 100



HIGH SCHOOL PLAN



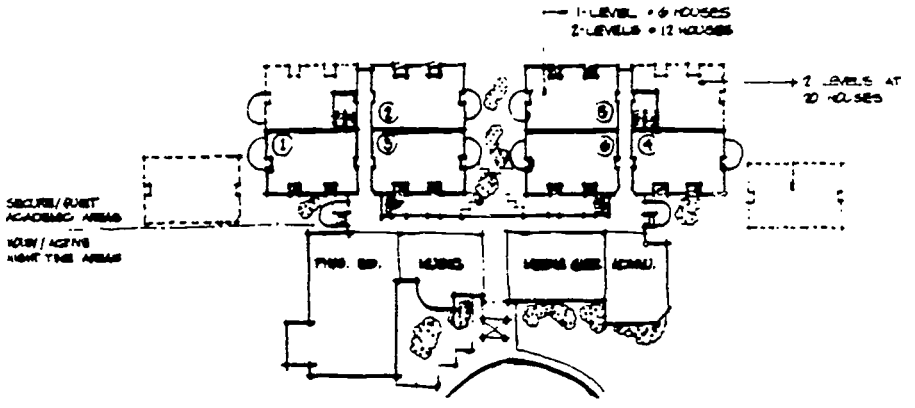
STUDENT HOUSE PLAN



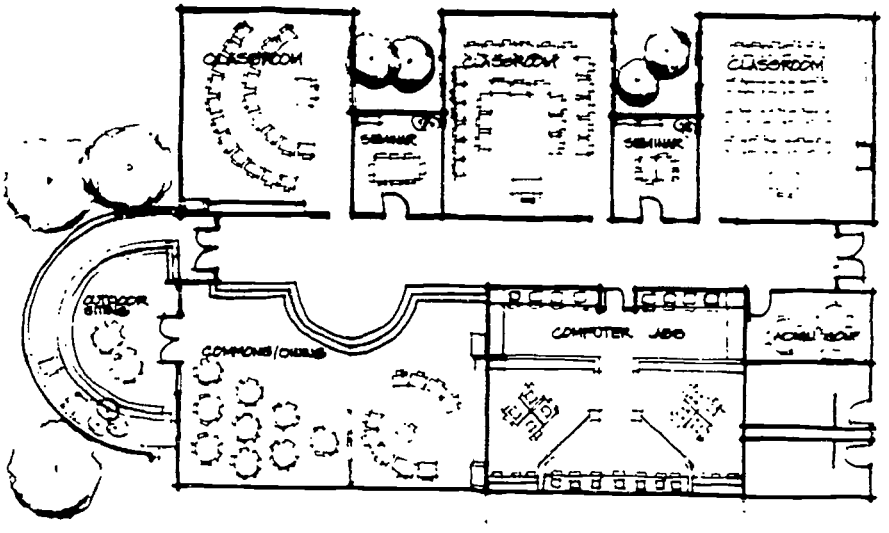
STUDENT HOUSE SCHEMATIC

- MARYLAND STATE DEPARTMENT OF EDUCATION
- MODEL STUDENT HOUSE & HIGH SCHOOL

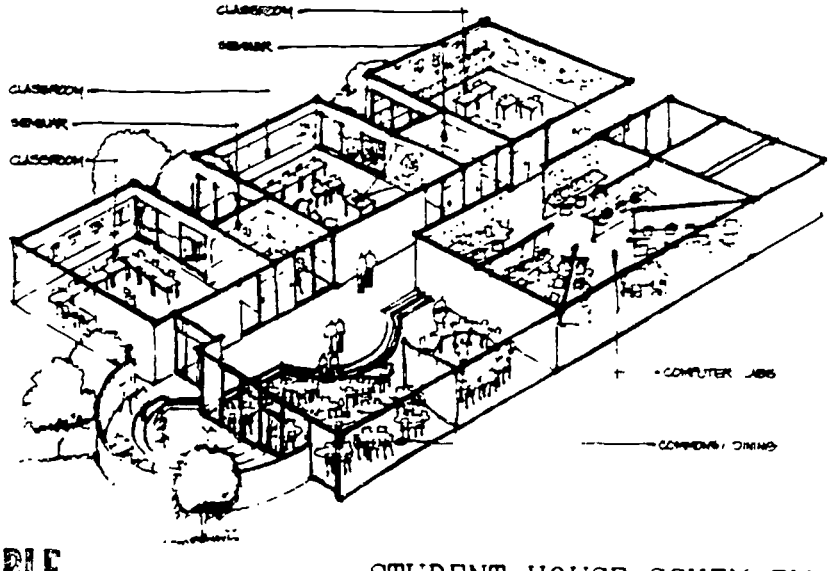
SHWC, INC.
Architects Engineers Planners



HIGH SCHOOL PLAN



STUDENT HOUSE PLAN



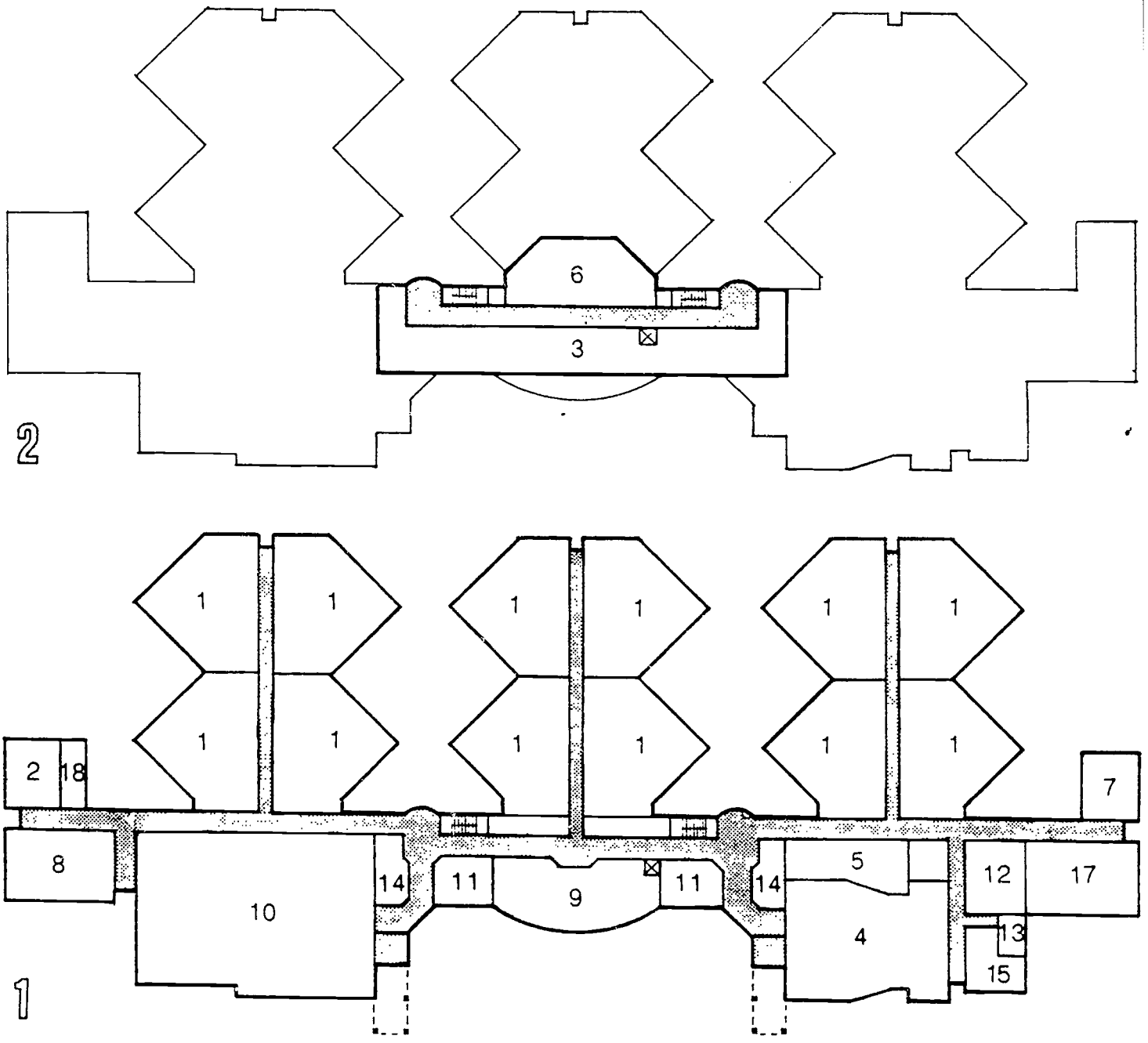
STUDENT HOUSE SCHEMATIC

- MARYLAND STATE DEPARTMENT OF EDUCATION
- MODEL STUDENT HOUSE & HIGH SCHOOL

SHWC, INC.
Architects Engineers Planners

0 50 100 200 FT

1. STUDENT HOUSE
2. ART
3. SCIENCE
4. AUDITORIUM
5. MUSIC, DANCE/THEATER
6. BUSINESS EDUCATION
7. HOME ECONOMICS
8. TECHNOLOGY EDUCATION
9. MEDIA CENTER
10. PHYSICAL EDUCATION
11. HEALTH SERVICES, ADMIN.
12. KITCHEN
13. RECEIVING/STORAGE
14. TOILET
15. MECHANICAL
16. COURTYARD
17. CAFETERIA
18. GEN. PURPOSE CLASSROOM



HOUSE WITHIN A SCHOOL - SCHEME 'A'

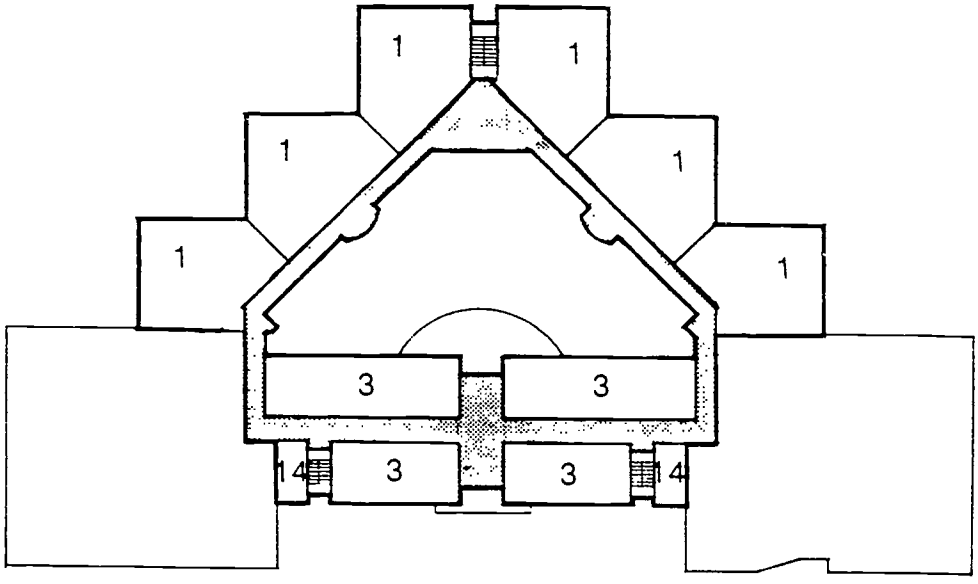
A HIGH SCHOOL FOR 1200 STUDENTS

GRIMM AND PARKER
ARCHITECTS • PLANNERS • ENGINEERS
4081 POWDER MILL ROAD • SUITE 401 • CALVERTON, MD 20705 • (301) 595-1000 • FAX (301) 595-0089

0 50 100 200 FT

1. STUDENT HOUSE
2. ART
3. SCIENCE
4. AUDITORIUM
5. MUSIC, DANCE/THEATER
6. BUSINESS EDUCATION
7. HOME ECONOMICS
8. TECHNOLOGY EDUCATION
9. MEDIA CENTER
10. PHYSICAL EDUCATION
11. HEALTH SERVICES, ADMIN.
12. KITCHEN
13. RECEIVING/STORAGE
14. TOILET
15. MECHANICAL
16. COURTYARD
17. CAFETERIA
18. GEN. PURPOSE CLASSROOM

2



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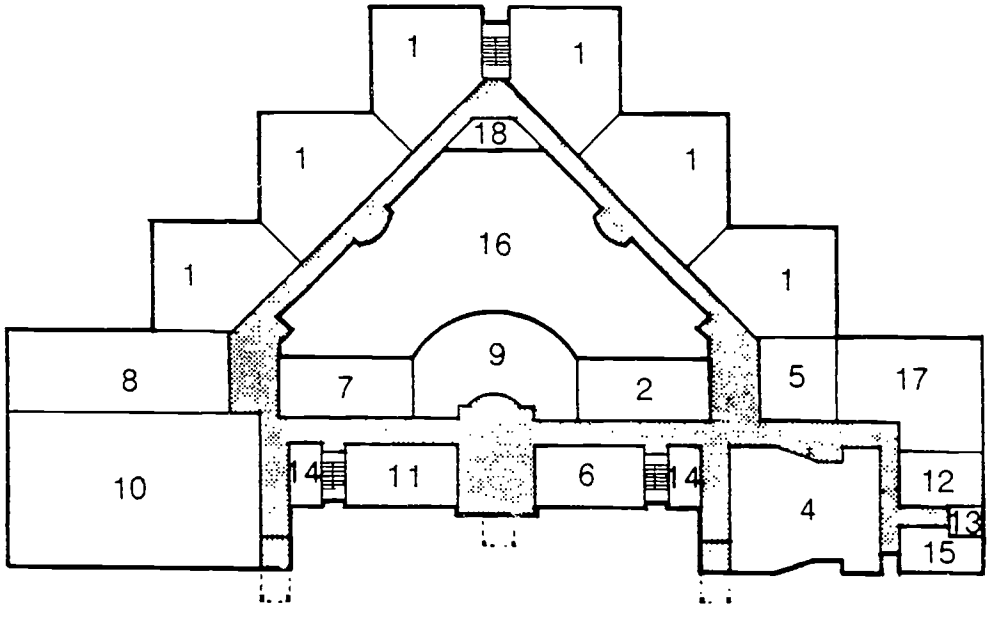


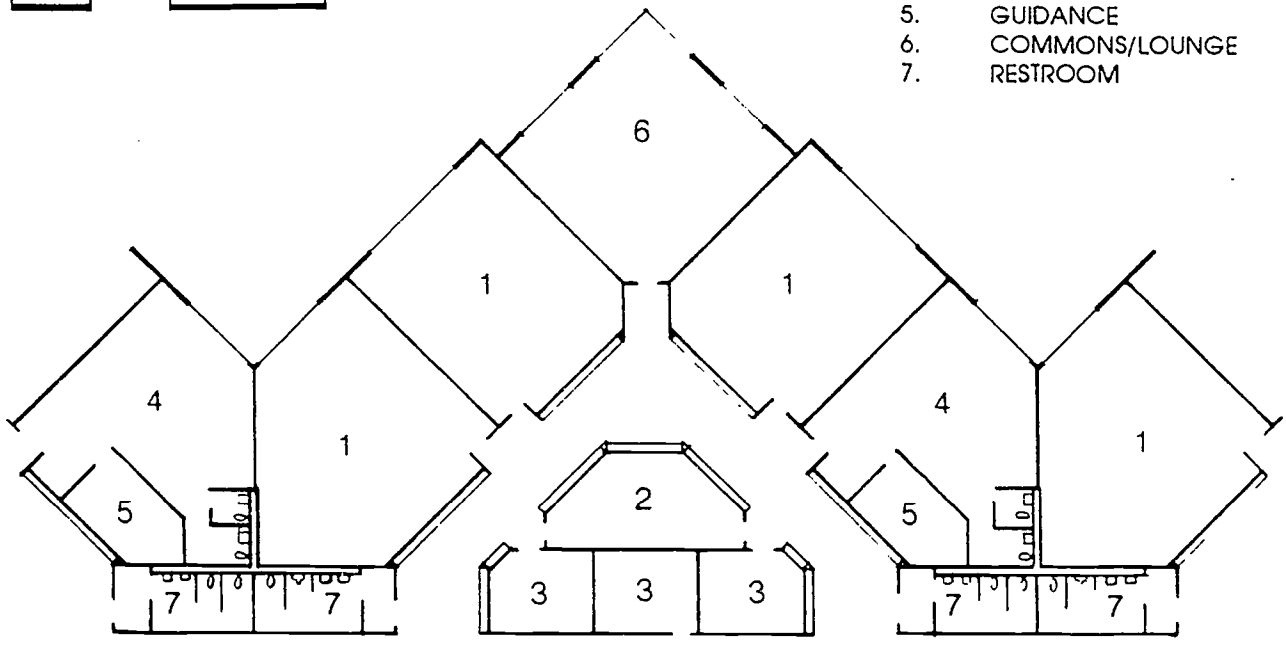
HOUSE WITHIN A SCHOOL - SCHEME 'B'

A HIGH SCHOOL FOR 1200 STUDENTS

GRIMM AND PARKER
ARCHITECTS • PLANNERS • ENGINEERS
4061 POWDER MILL ROAD • SUITE 401 • CALVERTON, MD 20705 • (301) 595-1000 • FAX (301) 595-0089

1. CLASSROOM
2. SEMINAR ROOM
3. COMPUTER MINI-LAB
4. TEACHERS ROOM/STOR.
5. GUIDANCE
6. COMMONS/LOUNGE
7. RESTROOM

0 10 20 40 FT



TYPICAL STUDENT HOUSE

HOUSE WITHIN A SCHOOL

A HIGH SCHOOL FOR 1200 STUDENTS

GRIMM AND PARKER
ARCHITECTS • PLANNERS • ENGINEERS
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References and Bibliography

Alexander, C., S. Ishikawa, M. Silverstein with M. Jacobson, I. Fiksdahl-King, and S. Angel, A Pattern Language: Towns, Buildings, Construction, New York: Oxford University Press, 1977.

Barr, Robert D. "Alternatives for the Eighties: A Second Decade of Development" in Phi Delta Kappan, April 1981.

Beckner, Weldon, The Case for the Smaller School, Bloomington, Indiana: Phi Delta Kappa Educational Foundation, (Fastback 190) 1983.

Coates, Gary, ed., Alternative Learning Environments, Community Development Series, Stroudsburg, PA: Dowden, Hutchinson & Ross, Inc., 1974.

Commission for Students At-Risk, Maryland's Challenge: A Report of the Commission for Students At Risk, January 1990.

Commission on Vocational-Technical Education, Fulfilling the Promise: A New Education Model for Maryland's Changing Workplace, August 1989.

Dunn, R. and S. Griggs, "Learning Styles: Quiet Revolution in American Secondary Schools," The Clearing House, Vol 63., Sept. 1989.

Engelhardt, N.L., Complete Guide for Planning New Schools, West Nyack, NY: Parker Publishing Co. Inc., 1970.

Goldberger, P., "Architecture View: And the Winning School is - Smaller," The New York Times, May 27, 1990, p.H23.

Governor's Commission on School Performance, The Report of the Governor's Commission on School Performance, August 1989.

Gregory T.B. and Smith G.R., High Schools as Communities: The Small School Reconsidered, Bloomington, Ind.: Phi Delta Kappa Educational Foundation, 1987.

Grossnickle, Donald R., High School Dropouts: Causes, Consequences, and Cure, Phi Delta Kappa Educational Foundation, (Fastback 242) 1986.

Hirschi, T., Causes of Delinquency, Berkeley, CA: University of California Press, 1969.

Maryland Task Force on the Middle Learning Years, What Matters in the Middle Grades: Recommendations for Maryland Middle Grades Education, February 1989.

Odden, A., "Class Size and Student Achievement: Research-Based Policy Alternatives, "Educational Evaluation an Policy Analysis, Summer 1990, Vol 12. No.2, pg.213-227.

Ornstein, A., "School District and School Size: An Evolving Controversy," The Clearing House, Vol 63, December 1989.

Orr, Margaret Terry, Keeping Students in School, San Francisco: Jossey-Bass Inc., Publishers, 1987.

Propst R., Weinstock R. ed, High School: The Process and The Place, New York: Educational Facilities Laboratories, 1972.

Raywid, Mary Anne, "Schools of Choice: Their Current Nature and Prospects," in Phi Delta Kappan, June 1983.

Safer, David, J. MD. with contributors, School Programs for Disruptive Adolescents, Baltimore: University Park Press, 1982.

Shilling, J., "Forecasting Success for All Students: A Vision for Public Education in Maryland," April 1990.

Sizer, T.R., Horace's Compromise, The Dilemma of the American High School, Boston: Houghton Mifflin Co. 1984.

U.S. Department of Education, What Works, Research About Teaching and Learning, Washington, 1986.

Wehlage G., chapter in Lakebrink, Joan M. ed., Children at Risk, Springfield, Ill: Charles C. Thomas Publisher, 1989.

Wehlage G., Rutter R., Smith G., Lesko N., Fernandez R., Reducing the Risk Schools as Communities of Support, Philadelphia: The Falmer Press, 1989.

Wheelock & Sweeney, "Alternative Education: A Vehicle for School Reform", Changing Schools, Vol 17, Issue 2, Spring/Summer 1989.

SCHOOL FACILITIES CONFERENCE
March 20, 1991
Sponsored by
School Facilities Office, Office of Administration and Finance,
Maryland State Department of Education

Program

9:00 - 9:30 **Registration**

9:30 - 9:45 **Opening Remarks**

Dr. Bonnie S. Copeland
Deputy State Superintendent of Schools
Maryland State Department of Education

Introduction *Model Educational Specifications for Technology in Maryland Schools*

Mr. J. William Ilmanen
School Facilities Office
Maryland State Department of Education

Introduction *Facilities Planning Guide for Successful Secondary Schools*

Ms. Barbara B. Andrews
School Facilities Office
Maryland State Department of Education

9:45 - 11:00 **Panel Discussion I**

ACADEMIC ACHIEVEMENT/CAREER DEVELOPMENT PROGRAM AND ISSUES

Dr. Samuel R. Billups
Coalition of Essential Schools,
Walbrook High School
Baltimore City Public Schools

Dr. Edward Doyle
Croom Vocational High School
Prince George's County Public Schools

Mr. Gregg Talley
Division of Instructional Technology
Maryland State Department of Education

Dr. Gerald Day - Moderator
Career & Technology Education
Maryland State Department of Education

11:00 - 11:15 **Break**

11:15 - 12:30	**Panel Discussion II**
	REMOVING BARRIERS/PERSONAL DEVELOPMENT PROGRAMS AND ISSUES
	Ms. Bettye Savoy *Single Parents Program* *Northwestern High School* *Prince George's County Public Schools*
	Ms. Jan Stocklinski *Comer Process Supervisor* *Prince George's County Public Schools*
	Dr. Margaret Trader *Executive Director of Instruction/Curriculum* *Washington County Public Schools*
	Dr. Phyllis Sunshine - Moderator *Compensatory and Supporting Services* *Maryland State Department of Education*
12:30 - 1:15	**Luncheon** - *Group Assignments*
1:15 - 2:30	**SCHEMATIC DESIGN REVIEW WORK SESSIONS**
Group 1	*Room 101* - Mr. Thomas Clark *TCA Architects* *House for a Middle School*
Group 2	*Room 102* - Mr. Dwight Douglass *Probst-Mason Inc., Architects* *"Fine Arts" House for a High School*
Group 3	*Room 103* - Mr. R.C. Garcia *SHWC Inc., Architects/Engineers/Planners* *House for a High School*
Group 4	*Room 104* - Mr. Steven Parker *Grimm & Parker, Architects* *High School for 1200 Students*
2:30 - 2:45	**Break**
2:45 - 4:00	**DESIGN PRESENTATION AND DISCUSSION** - *Auditorium*
	Mr. Clark, Mr. Douglass, Mr. Garcia, Mr. Parker
	Mr. Allen Abend - Moderator *School Facilities Office* *Maryland State Department of Education*
4:00	**Adjournment**