The kinds of spaces needed to house the learning activities of today's school English program are discussed in this paper. The following spaces are recommended in the planning of new buildings or in the remodeling of existing buildings: (1) a space capable of seating several hundred persons for viewing plays and films and for large-group demonstrations; (2) a space where a teacher can meet with a group of 20 or 25 students for discussion and teaching activities; (3) a space for smaller large-group activities, one suited to joining two to four "class" groups for a presentation or demonstration; (4) a space for conference work between a teacher and one to three students; and (5) solitary work areas where an individual can use a microfiche reader, a record player or tape machine, a film projector, or film strip or slide viewer. The specialized kinds of equipment needed for each of these spaces are also discussed. Selected examples of facilities and programs now in use in a number of schools are presented. A lengthy discussion of the recommended English learning environment concludes the monograph.
"English Learning Environments"

a monograph

prepared for

The National Council of Teachers of English
Committee on English Learning Environments
James T. Lape, Chairman

by
Harry L. Walen
Associate Chairman

May 1972

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FOREWORD

The National Council of Teachers of English Committee on Design of the English Classroom was first named in 1967 to consider and make recommendations concerning the design of the English classroom. As it became increasingly evident that functions in teaching English today and in the foreseeable future cannot be considered in the simplistic environment of a general-purpose classroom, in 1970 the committee was reconstituted on its own recommendation as the Committee on English Learning Environments, with the mission of presenting a report and recommendations at the National Council convention at Las Vegas in November 1971. This was done, and a visual essay on space which was prepared for the committee by Dr. Howard Zimmerman, a report consisting of forty-four pages of text and diagrams, and a series of recommendations were all presented at the open meeting of the committee. It was felt, however, that a further and broader gauge statement was needed on behalf of the committee. An extension of one year was sought and granted, the visual essay will hopefully be put into a more available form, and this monograph has been prepared.

A most important step which gave the committee more data, opportunity to work in terms of actual buildings, and the advantages of grassroots consultation with teachers and department heads using facilities in buildings occurred in October, 1970, when the Educational Facilities Laboratories, Inc. of New York City became interested in supporting the work of the committee in terms of extending ideas and theories to actual buildings in order to test and to derive a solid background for conclusions and recommendations. The NCTE committee worked very closely with a local committee in the Broward County, Florida, Public Schools during 1971 and enjoyed their assistance in preparing the report for November 1971. This report included architectural background data from Ervin Hill of Atlanta, Georgia, the committee's architectural consultant; conclusions and recommendations
premised on study in Broward County buildings and of building plans with the understanding cooperation of Superintendent Benjamin Willis; and data gathered from a committee-inspired English Learning Environment Symposium in Boston, Massachusetts, February 1971, including Superintendent Willis, Verda Evans and John Maxwell of the NCTE Commission on Curriculum, and NCTE President Robert A. Bennett. Also a project in remodeling facilities in an older building was accepted in principle by the Needham, Massachusetts, School Committee in January 1971, and funded by the Town Meeting in March, 1972.

The chairman, James T. Lape, was elected vice-president of NCTE in November 1971 and thereby assumed responsibility for planning the program for the Minneapolis convention. The associate chairman, Harry L. Walen, consequently assumed responsibility for seeing that the commitments of the committee's added year were fulfilled. Fortunately, he was appointed Commonwealth Fellow in the Massachusetts Department of Education and was thereby enabled to write this monograph and develop illustrations for it as a research project.

Some twenty meetings have been held at NCTE conferences, in Boston, and in Fort Lauderdale, ranging from one to three days in duration, with all but two local Broward County meetings attended by the chairman and associate chairman. Members of the committee have conducted extensive research through questionnaires and polls, through ERIC resources, through visiting schools, through wide reading, and through the resources of the architectural consultant and extensive experience of committee members with school building. Members of the committee in reviewing the text of the present monograph have said, "It all seems so simple, clear, and reasonable now," but realize that many hours of research, thinking, and consulting together have been invested to make such a result possible. The committee hopes its work as expressed in this monograph will help teachers of English and department heads to make more creative use of present facilities and to develop
support for remodeling present spaces and for the teacher's enhanced roles in planning English learning environments in the buildings of tomorrow.

The NCTE Committee on English Learning Environments expresses its deep appreciation to Dr. Harold Gores, president of Educational Facilities Laboratories, for his understanding and assistance and for making available the grant which made it possible for the committee to extend its work from theory into reality.

Sketches were prepared by Dr. Howard Zimmerman, the large diagram by Erwin Hill, and The Needham High School diagram by Daniel Santry. All photographs were taken in Broward County Schools by Martin Singer, professional photographer, in connection with the EFL grant.
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A BACKGROUND OF CHANGE

The twentieth century has seen geometrically increasing changes in amounts and kinds of knowledge, in technology, in society, in morals and mores, in mass media of communication, and in the resulting needs of young people. Yesterday's curriculums, teaching methods, teachers, and attitudes toward young people are inadequate to meet these changes. Even the classroom desks and auditorium seats that fitted a high school student in 1900 are completely outsize by today's student.

In his extensive polling of leading thinkers in the field of English, Edmund Farrell has determined what those selected individuals forecast as likely expectations in response to the changes. Several among these forecasts have a direct bearing on probably needs in English learning environments in the future. And, because the future already is upon us, because these very words of immediacy will not see print for months at the earliest, this means we are actually writing about immediate needs.

Of these, perhaps the most pointed for our purposes is the projection that "Flexibility of instruction will necessitate changes in school architecture and classroom organization, differential staffing, and new roles for teachers," As if to chasten us, however, in thinking ahead of possibilities of such changes, in the final paragraph of High School 1980 Anthony Oettinger writes, "ten years


or so from now the schools will be pretty much as they are today. Most of the school buildings that will be in use in 1980 are in use today. Most of the teachers who will be teaching in 1980 are teaching today. . . . Given the intellectual and social complexity of education and the weakness of its weapons of attack, we will simply have to grit our teeth, try as hard as we can to implement change, but muddle through as best we can no matter what happens."

Understanding this backdrop of change and uncertainty, the Committee on English Learning Environments makes its own assessment of changing needs and its response in terms of recommendations. In light of the data already presented here, it will not seem strange that in its Preliminary Report of August 1971 the Committee's position was "that the traditional English class no longer exists as such and that English learning experiences are such that a general-purpose classroom cannot accommodate them satisfactorily."

LEARNING ACTIVITIES AND SPACES FOR THEM

English learning activities range from large-group viewing experiences of films and plays to solitary reading and writing. They involve discussion in very small groups and discussion in larger groups. They involve speaking to groups and role-playing or dramatizing within or to groups. They involve specialized individual learning experiences in reading and speaking. They involve work in journalism and with graphics. They involve expression in media other than direct writing and speaking, as in drawing, painting, and expression through films and tapes.

And lest it be thought that all the new media with their facilities for independent study and the emphasis on individualized instruction have eliminated the need for group meetings and therefore for school buildings as we know them, let us be mindful of a story that is told of a court decision in one of our Eastern states. It appeared that in a very small community, a mother believed herself,
a college graduate, to be better qualified than the town's one teacher to supervise the learning activities of her child. Accordingly, she kept her child out of the small local school and taught him herself. In due course, the authorities brought suit to force her to send the child to school. The story goes on to tell that the judge in ruling against her and requiring her to send the child to school, postulated that a vital aspect of the school experience was the child's right to interrelate with his peers in his learning experiences. All of our emphasis on the individual, in other words, must not lead us to forget the individual's need to interrelate. The classroom experience in its varied forms is an integral part of the learning experience.

What kinds of spaces are needed to house these learning activities and what facilities are needed in the spaces? Do the buildings, spaces, and facilities now available meet these descriptions? If not, what then do we recommend in the planning of new buildings or for remodeling buildings that already exist?

First, it is apparent that a space capable of seating several hundred persons is needed for viewing plays and films and for large-group demonstrations. In this environment students gain experience in behavior as members of large groups and it is possible for an optimum number of people to take advantage of each performance or projection. It is apparent that an auditorium will not be used as frequently as other spaces for English programs and therefore should be useable for other purposes as well. It could be shared with other subject-matter areas or could be planned to be readily divisible into smaller large-group spaces. Subdividing the auditorium, however, both restricts its possible assignment as an auditorium and produces a number of smaller large-group spaces which are not flexible beyond this point. An auditorium with complete stage and media facilities is a large but flexible unit for any kind of program that lends itself to a large-audience situation and is a natural instrument to stimulate
interest and activity in dramatics.

It is also apparent that spaces are needed where a teacher can meet with a group of twenty or twenty-five students for discussion and teaching activities that can be conducted best with such a group, spaces we have traditionally designated as classrooms. Seminar group discussion and group conferences.

Increasingly as teachers work together in teams to make the best use of their several talents, it is appropriate for one teacher to give a presentation to a group of seventy or more, who after this presentation or after viewing a film, will wish to subdivide into smaller discussion groups as rapidly as possible.

The need for smaller large-group spaces such as one suited to joining two to four "class" groups for a presentation which will become the subject of study and discussion, can be met through the use of some type of portable space separator. Immediately at the conclusion of such a large-group session, the smaller groups reform in their areas and move the separators into place.

Much conference work between a teacher and one to three students can be satisfactorily conducted at the teacher's desk in a group meeting room, in a seminar room, or at the teacher's desk in office or carrel. This kind of conference frequently is focused on a paper or in discussions of a problem or issue that involves reference to books, periodicals, or records, so that a desk or table surface is needed; and a degree of sound privacy is strongly desirable.

Solitary work areas are essential for the learning processes of the future. More is needed than a private desk for writing and an isolated chair to sit in while reading. Both of these are provided in the tables, easy chairs, and carrels of a modern library (see photograph 1). But the new media center will offer wired carrels where an individual may plug in a microfiche reader, a record-player or tape machine, a concept-film projector, or a film-strip or
Fort Lauderdale High School: Reading area in media center.
William Piper High School: Student uses reading lesson with magnetic tape message in wired carrel. 2 (5)
Fort Lauderdale High School: Room provided with wired carrels, tables, and chairs for individual work or observation in specialized work in reading.
Fort Lauderdale High School: Students working in journalism room.
slide viewer (see photograph 2). The most up-to-date media center will have even a dial retrieval center, such as that in the new Hall High School in West Hartford, Connecticut, where he may dial and receive any one of scores of taped or video-taped materials in a carrel. Eventually it may be possible for him to dial through his home telephone for materials from a computerized media center, as is possible even now in a limited degree at the University of Illinois in Champaign-Urbana.

If the derivation of data, attitudes, and enjoyment through media is to become increasingly important, so is communication through these media. The media center will provide work spaces where teachers may prepare materials for use with students and where students may experiment with communication through tape, video-tape, films, and radio and television programming.

Some specialized areas for English learnings need group meeting rooms specially equipped. Developmental reading and the learning of English as a second language become increasingly important at the high schools offer more and more opportunity to students of diverse backgrounds. The teachers trained to give special help in these areas needs a separate room with facilities for small group demonstration and individualized work with reading kits and mechanical and electronic equipment to assist the individual (see photograph 3).

Publications, again, are specialized and need an area where equipment and work in progress can be left secure. Students also use typewriters and duplicating equipment that could be audibly annoying to others. They make considerable use of table space and cupboards (see photograph 4).

The speech and drama area, also, is a noise producer and needs some specialized equipment. A low platform is needed across one end of the room. A lectern should be provided, and chairs with folding tablet arms combine audience seating with a writing or reading surface when necessary (see photograph 5).
William Piper High School: "Working end of speech and dramatics room, including platform, lectern, screen, etc. 5 (6)"
South Plantation High School: Reading lounge area provides a humane to reading center. 6 (6) adjunct
South Plantation High School: Areas between major parts of buildings are adapted as student gathering spaces.
William Piper High School: Students in large open area adjacent to cafeteria and auditorium.
Non-school spaces are needed in the humane school, as the Committee described in its Preliminary Report: "Important to the student's sense of belonging and of stability in his school environment, is the availability of spaces for living and social purposes in the school building. Alcoves, wide carpeted corridors with seats along the sides, and student common rooms which are comfortably decorated and furnished are important to the student's sense of fulfillment in a learning program in the building. Such surroundings relate positively to the goals of developing interrelations among the humane arts, and should be readily available throughout these areas." (See photographs 6, 7, and 8.)

SELECTED EXAMPLES

Now that we have described functions of English teaching and spaces that accommodate them, it may be helpful to refer to a few examples of using such spaces in teaching and learning programs. In considering these examples, it is well to bear in mind Dr. Oettinger's caution that traditional buildings can be modified and teachers can be led to see strengths in new approaches and to grow through accepting them.

In Needham High School, Massachusetts, a small team of teachers were employed an additional month in the summer to prepare a new course in Practical English which in effect attempted to respond to the question of what was most important in English to high school students without immediate reference to meeting assumed requirements for college admission. The reading was pertinent to today's world and included much contemporary writing as well as traditional writing relevant to contemporary topics. Much use was to be made of media and of discussion and role-playing techniques. The teachers hoped for interrelationships among their groups, common use of films and other materials, reports on tapes and film as well as in writing, and ways of relating the communication and discussion to the real-life concerns of students. A major inhibition on the program was the lack
South Plantation High School: English alcoves opening into wide corridor; students reading lounge area in center. 10 (7)
of a large-group space and the restraint on groupings through the necessity of using available egg-crate spaces.

The content and approach proved its appeal to young people and its effectiveness in teaching communication and culture. It has led to the development of a major modification in an older building around the needs of r. program. A wall separating two classrooms will be removed, carpeting and acoustic treatment provided for the entire space, two easily moveable acoustic partitions installed, electric outlets and lighting controls provided, blackout facilities and drapes installed, and moveable furniture and media equipment provided. As a result, the team in Practical English will have the flexibility it needs to function as a team, a humane learning environment will be made from two traditional classrooms, other classes will now have this flexible learning environment available, and the school in effect will have gained a teaching space at minimal cost to the taxpayer (see diagram 9).

In the new South Plantation High School in Broward County, Florida, English "classes" are conducted in deep alcoves from a broad corridor on an outside wall (see photograph 10). Groups can work together privately, spill out into the corridor, or readily combine. Portable chalkboard walls in the three rooms constituting a "corner" in the building can be folded back to provide a large-group viewing area. A small student lounge alcove in the middle of the area lends itself to casual conference or reading. The organization of classes is flexible--the environment is humane and helpful to learning.

The media center is on two levels, with conference rooms and departmental offices clustered around it, forming connectors with the subject-matter areas (see photograph 11). Its wide range of services and its resources, ranging from videotapes and microfiches to books and periodicals, are readily available. Professional personnel assist teachers and students in their use of these services
Needham High School: Plan designating before-and-after arrangements in remodeling English classrooms. (Blueprint courtesy of Daniel Santry.) 9 (7)
South Plantation High School: Media rooms and departmental and teacher center on two levels, with conference offices grouped around it.
William Piper High School: One corner of space in which four classes are organized, with resource materials in center. Note portable dividers at left to separate this whole area from central traffic patterns.
In the William Piper High School, also in Broward County, teaching alcoves open into corridors and also open back to back into wide central corridors. This produces a potential for confusion, at the same time it gives a potential for experimentation in teamwork with groups.

In one such back-to-back area, the department head experimented with setting up four teaching alcoves, two abreast and back-to-back, to produce one large area comprising the four alcoves and the wide central corridor between them. Portable chalkboard dividers were wheeled into position to separate the area from a traffic corridor on one side and other teaching alcoves on the other. All the central resource furniture and materials, such as teachers' desks, filing cabinets, and book racks, for four ninth-grade groups were moved to the wide central corridor area. Students were then organized in clusters, some with teachers and some not, in terms of the work in each student cluster, in the alcoves or in the central corridor. This became one learning environment of over four thousand square feet for one hundred twenty students, with their four teachers functioning as a team. The students could be brought together or subdivided immediately for any function of individual work, writing, testing, small- or large-group interaction, role-playing, or demonstration (see photograph 12). The department was making the most of a potential.

For a moment, let a teacher dream a little. He realizes that others have claims on school time, spaces, and facilities, and accepts this as a necessary element in structure. But within this structure he has four groups of twenty-five students each, according to NCTE recommendations, and is scheduled to meet them five times per week.

Now he steps beyond the school structure into the learning patterns for his students. With the support of department and administration he works out
a separate schedule for each of these groups. A basic schedule might include two group meetings each week, one for planning the activities of the group and individuals and the other for group discussion of common readings and media experiences. Every student would have a small-group conference including himself and three other media experiences of the individual, with individual conferences available for those few who would need still further individual attention.

Group and individual plans for the week would include assignments to attend a film or play, or view a television presentation, available commercially or made available at various times during the week through school facilities. Special tapes, videotapes, microfiches, or books might be on reserve that week in the media center for assigned use of members of the group or assignments given them to read from a common source of readings. Written assignments would be planned for and submitted to the teacher in time for him to be ready to discuss them in the small-group sessions. Cultural experiences of various kinds would be made available through school or community and included in the happenings which would be a part of the week's experience in English.

The media center and its specialists would be central to the effectiveness of such a program, with the resources and trained personnel supplementing the planning, consultation, and evaluation carried on by and with the teacher. Various student gathering or reading areas in the school and community would supplement the carrels and seating facilities of the media center as places for students to be while carrying on their learning activities. The emphasis would be strongly on the student's learning activities under the guidance of a teacher and with the assistance of other professional personnel. The teacher would be able to use his time effectively in planning the two general meetings for the group, the use of media center and community resources in light of these plans, and concen-
trated work with small groups of individuals in the cybernetics, communicative, perceptive, cultural, data-gathering, and interrelationship aspects of English.

THE ENGLISH LEARNING ENVIRONMENT

At this point we would ask just what kind of English learning environment we are talking about. What is it in terms of space and facilities? What special characteristics must it have? What must it do for the student, and what must it do for the teacher? What must it do for the "group," remembering the point about the child's "right to interrelate with his peers in his learning experiences," especially in an age when the television can turn the individual into an isolated receptor.

Obviously, it is an environment that provides for solitary work in comfortable and resourceful surroundings, for one-to-one conferences, for interaction in small groups, for opportunities to observe in a large-group situation, for specialized work in areas such as reading, for the availability of whatever resources and materials are needed, and for just "being" in a humane manner when not involved in a direct and identifiable learning activity. There is a general need for flexibility in the use of space and for proximity of the specialized areas to the resources and learning spaces.

It might be of interest to examine this learning environment and its components in light of space. All of these functions are to be housed. Each demands a certain amount of floor area; some may be interchangeable, and some will have to be isolated from the others. The spaces will need light, ventilation and heating or cooling, and acoustic and esthetic treatment. Each space will have to be provided with furniture for the people who will use it, with facilities for the functions that will occur there, and with appropriate equipment. There will also be provision for traffic, sanitary facilities, and custodial services. Office and working space for teachers will be needed. Storage must be pro-
vided for resource materials and equipment, and for supplies. It should be pointed out that forward-looking planning for an entire building will always include expansion space for tomorrow's improvement—such as the space for a retrieval center production and work center--, which may not be in immediate plans or may not even exist today, but which must be provided for in a building that will be used for fifty years or so.

Taking up the question of the total building parenthetically, it must be clear that our concern in this monograph is specifically for the English learning environments within a building. But the environments we speak to can be produced through remodeling in many existing buildings. In Portland, Oregon, a traditional school building was literally "gutted" and entirely re-modeled throughout; on the other extreme, the Needham remodeling referred to earlier is concerned with two classrooms in an older building, although this could be extended to others as the value of the new facilities becomes re-cognized. These environments are even better provided, however, when they can be planned for from the very beginning in a completely new structure, whether it be of steel, concrete, brick and mortar; or whether it be a large canvas canopy kept inflated by low air pressure, like the Harvard College indoor athletic facility. The building committee and architect will have to plan the building; we just want to make sure they include the space we need for our English learning environments.

Let us start, then, with a great open loft which is that portion of enclosed, ventilated, lighted, acoustically-treated space in the building apportioned to English. We know that a media center will be vital to other learning fields and therefore must be on the periphery of "English," but available to other areas in the school; that a theatre or auditorium will also have application in other areas of the school; that the cost of installing pipes will make it necessary to
place toilet areas and custodial rooms fairly close to one another in a location that will have to be fixed. We also know that we can be flexible in terms of ventilating through overhead ducts with frequent openings, of lighting through overhead units with control in frequent service boxes handled through support columns or hanging wire connections, and power connections wherever they are needed.

Since every function has a relation to the media center, which will be a large area, either through direct use of its resources in the center or through borrowing its resources for use in other areas, we can start by allocating a large area on the edge of the total space to this purpose. Certain specialized areas which need a sound insulation and security for specialized equipment we can locate in a block of space beside the media center on the outside wall of the building. Relocatable walls will provide separation between these areas but leave flexibility for the future, at a time when changing need may dictate a different use of that entire space. A corridor will provide for traffic between this specialized area and the media center, and also serve as a connector between them. In this space, then, will be "rooms" for specialized work in speech, reading, writing and language, together with an office for the head of the department and a storage and preparation area.

On the other side of the media center, toward the heart of the building, another "permanent" assignment of space can be made for a theater. As Robert Bennett said at the Boston Symposium, "It has been discovered that large auditoriums are impractical and little used. A little theater seating approximately two hundred students is more practical." Architect Ervin Hill added, "There is a tendency to de-emphasize the stage because of the new theater. A little theater has multiple uses and creates a nu. that cannot be replaced anywhere else." So the theater for our purposes should have a
thoroughly equipped stage, with sets, lights and controls, dressing rooms and toilet facilities, but should be in a space which can be used flexibly with facilities for extending the stage, removing seats and changing seat arrangements, and in effect using any part of the space for dramatic effects. The seating should be comfortable and able to accommodate two to three hundred people, depending on the size of the school. This is not intended to substitute for a school auditorium, but can be used for large-group observations at times when it is not being used for dramatic productions. A corridor accommodates traffic between the theatre and the media center, and serves as a connector between them.

Beside the theatre, with a corridor between for traffic, could be the forensics and dramatics "classroom," with a raised platform at one end, and specialized equipment for speaking. Balancing this area at the other side of the media center and adjacent to the specialized areas for speech therapy, etc. could be the journalism area, with its workrooms and equipment, and a small informal area for students.

Between dramatics and journalism, along what might be called the "front" of the media center, could be a large subdivided space convenient to the media center on one side and to the large learning environment on the other. Toilets would be provided at the ends of this area, and a teacher's office, work space, and storage area between.

Having allocated all the fixed or specialized functions in English learnings, what do we do with perhaps forty percent of the open loft now remaining (see diagram 12a)? (It would be well over fifty percent of the space if we eliminated the media center and theatre as English spaces.) This space would provide for sixteen "classes" in our hypothetical school of two thousand students if it were sub-divided into traditional classrooms. Expressed in human terms, this would
mean at least four hundred students and sixteen teachers.

Let us digress at this point for some general considerations that may be pertinent to the questions. There are many different ways of doing things. We could have elected to provide a large, hexagonal, three-stepped depression in the midst of open space or a circular platform surrounded by seats as in the "theatre" area (see photograph 13). We could have placed all toilets and workrooms that needed plumbing in a corner of the entire area. We could have eliminated any specialized area and instead provided in traditional fashion for general-use classrooms in egg-crate arrangement all through the English area. We do not, in other words, present a one-and-only definitive pattern for an English learning environment. But we do attempt to provide for functions in terms of space and facilities according to a consistent pattern and in light of foreseeable needs and the realities of the buildings that will provide the environment. Certainly there will be more than one way to solve a problem or to create an environment.

One specific problem deserves a brief specific reference, and that is the means for providing darkened spaces for various kinds of projection. The windowless building helps with this problem although in use of open space there can be an interference of light as well as of sound. The little theater provides one light-controlled space for projection, and it is advisable that some large-group spaces in the "open loft" area should be equipped for closing off for this purpose. Teachers should be aware, however, that over-shoulder projectors now have sufficient intensity of light so that they function well in a partially darkened room; that television screens properly shielded from reflection work well in average lighting conditions; and that rear-screen cinema projectors are now available which operate in moderately illuminated rooms. As always, several solutions to problems are usually available if one looks for them.
Now we return to our open loft to house four hundred students, and sixteen teachers in the group observation and interaction function of English learning. What can we do with the loft to provide the best learning environment for these functions?

We could leave our loft open and have the sixteen groups space themselves in the open area (see diagram 13a). Certainly there is interest in the completely open school building and many businesses have large open office spaces; theoretically, groups are completely flexible and can readily use space as they need it. The costs of fixed walls are saved. Members of the Committee have observed a completely open area equivalent to four large typing classrooms containing 140 typewriters, almost all used by girls practicing typing. The space, which was acoustically treated on floor and ceiling, had a very acceptable noise level. Each girl, working independently, was not distracted by the others. The teachers, who at first had not liked the openness, felt that the absence of walls reflecting sound close by had a major effect on the general noise level. Demonstrations could be given to the entire group simultaneously. The girls were learning in an office typing pool set-up that would prepare them for many business situations (see photograph 14).

But members of the Committee have also observed a high-ceilinged (twenty-two feet) open loft inhabited by eight hundred students and their teachers in which the noise level--despite acoustic treatment--was high and in which confusion was evident. The teachers shouted to draw attention. Groups struggled to isolate themselves from other groups acoustically and visually. It was difficult for groups to concentrate on observations. Teachers did not easily combine their groups in any team function, because they had so barricaded themselves with heavy objects like bookcases, filing cabinets, and desks. In interaction sessions, individuals had to raise their voices and cluster together in order to communicate within the group.
South Plantation High: Large-group
vpine area.
Some of the differences between these two open situations are implicit in the descriptions. Although both were acoustically treated, the twenty-two foot ceiling in the larger space allowed sound to become confused and to bounce back. In the one space all were doing the same task and producing the same kind of sound, whereas in the other, every group was doing something different and there was constant traffic through the entire area. In the one space very person had a fixed place at a typewriter table, whereas in the other, individuals had to accumulate objects around them to define their place. If space in itself can serve as an acoustic barrier, in this large open loft there was not enough space available to provide the needed effect—individuals seemed to the observer to swarm amorphously through the entire area. Students did not concentrate well; teachers looked harassed. As members of the Committee have heard Dr. Harold Gores say more than once, the individual needs a sense of place—he cannot function effectively without knowing where he is.

The completely open space is not ideal as a high school learning environment which must include both listening and viewing. This is not to say that in some circumstances a completely open space cannot be used effectively by teachers who understand and accept openness and work well together as a team. But the committee has been increasingly impressed with the conclusion that it is not the mere existence of open space in itself as much as it is the completely flexible use of space that is important to the successful learning environment (see diagrams 14a and 14b).

There are many ways of subdividing space. The use of space itself as a separator, we have referred to in a preceding paragraph—but where space is limited, this is in itself ineffective. Color, as in walls or carpet, can be a visual "locator" or separator. Light itself can serve a similar function—bright lights in a central space with subdued lighting between light centers
DIAGRAM 9: EXAMPLE FURNISHINGS ARRANGEMENTS IN FLEXIBLE SPACE AREAS Scale 1/8 = 1'0"
DIAGRAM 8: SCHEMATIC PLAN OF AN ENGLISH DEPARTMENT SHOWING IDEAL OF DIAGRAMS 1 THRU 7 IN A HYPOTHETICAL BUILDING SITUATION.
South Plantation High School: Four "classroom" areas clustered around the central meeting point- completely open space.
Northeastern High School: L-shaped room in corner of classroom block, readily divided by an accordion partition into three average-group spaces. 17 (15)
Fort Lauderdale High School: Arrangement similar to above, with hinged chalkboard wall sections.
Fort Lauderdale High School: Viewers' area, with screen behind vertical-lift chalkboards, and direct sight lines from all three "classroom" spaces. 19 (15)
produces an illusion of place and separation. Articles of furniture and moveable dividers of various colors and heights can be effective. Accordion-type partitions or folding walls provide a flexibility in longer-term subdivisions of space. Permanent walls are, of course, the ultimate division of space.

If we agree that we need some kind of flexible subdivision of space in our loft and understand that many choices are open to us, we can then suggest a way to provide this flexible subdivision. We assume first that the loft is acoustically treated on floor and ceiling. Then many possibilities offer themselves. If we use the accompanying diagram (see diagram 15) to help us in visualization, we might divide the floor area into three spaces, the one in the middle for eight class groups, the two at the end for four each. With one of the latter, we might put a relocatable partition from left to right, with an accordion-type partition separating the space at either side. We can immediately change either side from a double observation-type situation to two "class" groupings. We have the corridor space as a potential extension of the "class" space in the event that we want several small interaction groups.

For the second four-group area we could place relocatable walls at the two ends and down the middle, with accordion-type partitions in the middle. Once again, we keep the effect of space by extending into the corridor, but maintain a greater degree of visual and auditory privacy.

We call attention at this point to the very real need on the part of some teachers to have such privacy in their "classrooms." We have many such teachers in our systems at present, and are likely always to have some. Both to make use of their strengths and to assist traditional teachers in working successfully through the transition from the traditional classroom to the more flexible use of space in modern learning environments, it is important to have some spaces that resemble the traditional classroom.
The large, eight-group area in the center can be regarded in many different ways. It could be set up as two series of divisible two-group areas on each side of a central relocatable partition with the ends closed with relocatable partitions. One side could be sectioned off into four "classrooms" for traditional teachers, with the other a series of open bays into the corridor. One half of the central area could be set up with accordion-type dividers to outside posts, with or without outside walls, so that it could be immediately converted to and from a four-group open area to four one-group areas. Two tri-pod arrangements, which include a corner room separated from its two abutting rooms by moveable walls, could be planned, with a central two-group space divided by an accordion partition in the center of the open side. Many workable combinations are possible (see photograph 16, 17, 18, and 19).

If we have been successful in leading the reader to see with us from the Committee's point of view, he now thinks in terms of using space in terms of functions to produce an optimum English learning environment. But he may well say, "I understand what you mean by functions. I see how you would use space in terms of these functions. I do not, however, understand what goes into these spaces. How do you insure that in fact you can be flexible in the use of flexible spaces?" This is certainly a legitimate question and leads to a consideration of furniture and equipment, quoted from our Preliminary Report:

"The facilities available in these spaces range from the chalk board, the tack board, and the projection screen, to the lockable and moveable piece of furniture that would contain the projector, tape recorder, and record player which should be immediately available for use in the various areas. This piece of furniture should be heavy enough to be a secure place for storage and mounted on spherical wheels or skids so that it can be moved readily over carpeted areas (see diagram 19a). The teacher's desk would be in the workroom,
a. "SLED-BASED" FURNITURE FOR USE OVER CARPETING

Chalkboard, tackboard, peg-board, etc., back surface

Large wheels for use over carpeting

b. PORTABLE CAGEWORK

Flexible supply & waste connections

Sink

Large wheels

c. STAGE/SEATING/STORAGE UNIT

Cabinet doors each side

Large wheels (lockable)

Carpet covering

FIGURE 5: FURNISHINGS FOR USE WITH FLEXIBLE SPACES
Ceiling suspension grid

Retractable head posts which lock into ceiling suspension grid for lateral support.

Surface materials—
- Chalk surface
- Task surface
- Graphic panels
- White boards, etc.

Weight of entire assembly not to exceed 40 lbs.

Key for operating retractable posts

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**Figure 2:** Suggested Partitioning Device for use in conjunction with flexible spaces
Fort Lauderdale High School: Working area in teachers' planning area.
William Piper High School: Teacher working at her carrel in the teachers' area. 21 (17)
and the teacher would wheel materials (if they were heavy) to the teaching area from the desk. In the teaching area, the teacher would expect to use a table and chair rather than a heavy immovable desk, and students would be provided with individual light but strong stackable chairs and tables, preferably trapezoidal, which could be readily moved and set up in different patterns. Hassocks or fairly long, carpet-covered wooden frames could be available either for putting together into temporary platforms for stages, or along the sides of learning spaces for people to sit on (see diagram 19b). In discussion functions, close grouping and informality frequently are the keys to successful participation. The furniture should be such, in other words, that it could be as flexible in terms of arrangement for a particular need as the building itself should be. Even within the spaces provided through accordion-type or other partitions, there frequently is need for smaller groupings. Blackboard-type moveable shield partitions, or quarter-rounds about five feet high are very useful for this kind of flexibility in subdivision of space (see diagram 19c). They can be stacked against a wall when not in use, and also can be used if the group wishes to provide visual insulation at the opening of a bay or alcove onto a busy corridor (see diagram 19d).

The teacher's work space needs special attention in terms of equipment and furniture. In many school buildings there is a departmental office area, frequently small, and no provision for individual spaces for teachers. There is little work space as such. Yet, as the reader well perceives from the tenor of this paper, the teacher needs a place in which to work with individual students; furthermore, the classroom as such is wasted when devoted to a one-to-one learning situation, or even more a solitary workroom for a teacher reading papers or preparing materials. A teacher in today's school needs a place he can call his "office."
A few schools have provided office space between classrooms. They are, however, remote from duplicating materials or a resource center, and we recommend in new buildings a breaking away from the fixed classroom plan that would allow offices between classrooms. A few schools have provided office spaces for teachers, but frequently only enough to accommodate the so-called roving or peripatetic teacher who is not assigned to a single classroom.

New school buildings increasingly provide for a teacher area which includes a departmental supply and textbook storage room; working surfaces, supply cabinets and duplicating machines (see photograph 20); together with easy chairs, a refrigerator, hot plate and other facilities for between-class relaxation. This is a necessary aspect of the human school. Beyond this basic general equipment, each teacher is provided with a large carrel which provides a semi-private area with a surface for working, a storage place for personal effects and books, an adequate reading light, and an extra chair for student or parent conferences (see photograph 21).

This area, as indicated earlier, should be adjacent to the media center (see photograph 22). The media center not only stores all kinds of resources for teacher and student alike—books, periodicals, disc records, tapes, slides, film strips, concept films, reels of film, microfilms, microfiches, videotape, and projecturals; but provides the equipment for using these resources, places for working with resources, professional help in locating materials, and work spaces and equipment for preparing many of the media (see photograph 23). Here the teacher gathers the materials for a given presentation for use with the overhead projector, tapes, or video tapes. Here also the student experimenting with the use of media other than print, such as the film, video tape, or tape, finds equipment and professional assistance in his learning how to use the communications media of his world.
William Piper High School: A-V storage room

(Specialist's comment: "These shelves will be empty when the school has its full enrollment.")
William Piper High School: Teacher is assisted by media specialist in preparing materials for demonstration purposes.
THE TEACHER'S INVOLVEMENT IN PLANNING

The committee would urge most strongly that teachers and department heads be involved from the beginning in any planning for buildings and facilities, whether this be for completely new building, building additions, or renovation of standing buildings. These are the people who will be using the building, who are sensitive to the needs of young people and society, who are most likely to be looking ahead to future needs. Experience indicates that architects work from the basis of educational specifications which may or may not have been developed through teacher participation, and do not consult with teachers as plans are completed and the construction of a building commences. They thereby lose the advantage of the professional's knowledge and advice concerning the use of a facility, and the teacher loses the opportunity to play a role in shaping the environment in which he and his students will live and work.

In order to play a successful role, the teacher needs to be aware of the thinking expressed in this paper and to know something of the working of building committees with architects and builders and also something of materials and procedures. He should know, for instance, that in most situations a special bond issue that must be approved by the taxpayers or an appropriation that must be approved by some governing body will determine how much money will be available for building. He should also know that the actual cost of the building will be determined by the prices of materials in a market that has been rising for a good many years and the costs of labor, which again have been rising in all the trades. The fact that appropriations are always close to the line and that costs are more likely to increase than decrease may explain why so frequently it is necessary to cut back even from the frequently limited plan of the original building.
In its preliminary report, the committee summarized the process of planning a building as follows: "Professionals in the educational system ordinarily prepare a description of the educational needs in a proposed building. This description is commonly called the educational specifications for the building. This will list the kinds of space that are needed, frequently the functions to be carried on in the spaces, and the approximate area the school people expect might be allocated to the purpose.

"The architect then converts the educational specifications into a rough plan for a building that would meet these specifications. Sometimes he prepares more than one such plan. He also prepares a very loose estimate of what each of these plans might cost as the prevailing rates of labor, remuneration, and materials.

"After the school people have reviewed and critiqued the educational specification and the proposed diagrams, that agency which will actually be responsible for putting up the building will consider matters of cost, and work specifically with the architect in the determination of final plans.

"Characteristically, school people have had more to do with the development of educational specifications and less to do with the actual implementation of these specifications into the final plans for a building. It should be clear that it is essential for the professional people who will be using the building to remain closely related to the developing of the final plans."

Forward-looking school systems encourage the participation of teachers in this kind of planning. A pattern for an English department to follow in initiating its work in a program for planning a new building or major changes in a building might first include thorough discussion of influences on young people, such as poverty or affluence, television and the immediacy of world events, the Vietnam war or any other overwhelming issue, the civil rights movement, earlier physical maturation through improved nutrition or delayed matura-
tion through poor nutrition, or the lowering of the legal age of majority, all of this in the context of the community from which the school generates its student body. Then in discussing the curriculum and the teaching techniques that would be most effective in light of the needs of young people, it is important to consider the needs of society in terms of a literate and informed citizenry which knows something of its cultural heritage and can participate constructively in the democratic process. The teaching staff would consider curricular possibilities such as interdisciplinary studies, teaching English as a second language for members of minority groups, the development of team teaching and differentiated staffing within the department, the use and teaching of media, the development of mini-courses and of elective programs, and the selection and use of readings relevant to contemporary and future issues from contemporary and traditional sources. From this sequence of discussion should grow a new awareness of goals and possibilities, of the role of English, and of the needs to be met in the new or renovated buildings. At that point, the material in this paper may be useful to guide teachers in their considerations of spaces and facilities to accomplish desired goals.

In working with architects and planners, it is important to realize that they are faced with certain absolutes. Foundations have to be strong and permanent; roofs are heavy, sometimes carry loads of wind, water, or snow, and must be securely supported. Plumbing is expensive to install and not flexible excepting at great cost, so that any place that needs plumbing becomes quite permanently set in a building. There are building codes for structural safety and fire safety, and there are sanitary codes. The architect must be familiar with all and make sure that the building complies. But being an architect, he should demonstrate ingenuity in solving problems to meet educational needs.
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<tr>
<th>NRC</th>
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<tr>
<td>0.30</td>
<td>Carpet glued directly to concrete floor slab.</td>
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<tr>
<td>0.40</td>
<td>Carpet laid over separate 40 g. hair pad. Carpet is coated with sizing. (Note: This type of construction is limited to spaces in which carpet is run less than 100 ft. &quot;along the grain&quot; because of the difficulty of stretching in longer runs.) Same construction as b, except carpet is not coated with sizing.</td>
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<tr>
<td>0.60</td>
<td>Carpet with adhered sponge-rubber backing glued directly to concrete floor slab.</td>
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**Figure 4: Noise Reduction Coefficients for Various Carpet Constructions**

Noise Reduction Coefficient is the average of the rates of absorption of sound at 250, 500, 1000 and 2000 cycles per second. Data shown were taken from "Sound Conditioning with Carpet" a publication of the Carpet and Rug Institute, 909 Third Avenue, N.Y., N.Y. The carpet shown above is a loop-pile type, approximately 45 oz. face weight, with a pile height of 0.25"—a common style found in schools.
Materials vary a great deal, and the quality that may be desired may be expensive. Professional educators and architects alike, however, have a responsibility to insist on that quality which is necessary to the desired educational environment. We could refer, for instance, to some related examples of the importance of insisting on materials related to providing an acceptable acoustic environment. One example would be concerned with that acoustic floor covering called carpeting (see diagram 23a). Industrial carpeting may be relatively inexpensive and last for years, yet have a shallow pile and have almost no acoustic properties. Another would be that office partitions with metal surfaces are relatively inexpensive and easily handled but their surface bounces sound. Still a third would be that ceiling materials vary tremendously in their acoustic properties. Unless the educational staff makes sure that the architect has specified appropriate building materials, in other words, the new construction may emerge with all the appearance of acoustic planning for a flexible use of open space for educational purposes and yet have none of these qualities. The educational staff would need to project this kind of evaluative consideration into all areas of materials that directly affect the learning environment, from acoustic treatment to lighting and air conditioning, the size and quality of carrels provided for teacher "offices" and media center working spaces, chalk boards, furniture—indeed, everything, building material, furniture, or facilities, that impinges directly on the educational process.

The conclusions from this paper might well be that English learnings happen in many places, many of them in a building called a school. The school building is an enclosed space which provides a specialized environment for students and teachers to live and learn in during a part of the day. Although activities and experiences may project far beyond the space of the school itself, this does
provide the major structured learning environment.

It is not the open, climatically controlled, acoustically treated, humanely designed and decorated space in itself that is the learning environment; it is rather the flexible and structured use of this space. The learning environment itself is attuned to the needs of students and teachers working independently or together in the varied functions of English learnings.

In the words of the Preliminary Report, "The committee suggests that the conclusions here be related to the reexamination and planning of curriculum in English, with the thought that such planning can result both in the more effective use of new proposals for planning of spaces and also a new look at the actual English learnings that will occur in these spaces. A new day is dawning in terms of education in general and specifically in terms of the opportunities in English. The committee urges a careful and broadminded study and acceptance of many of the changes implicit in meeting this brave new world. And the committee particularly recommends the direct and continuing involvement of teachers and department heads in the process of planning and completing plans for new facilities."