THESIS PROJECT

STUDENT/COMMUNITY RECREATION CENTER

WRIGHT STATE UNIVERSITY, WESTERN OHIO BRANCH CAMPUS

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SUMMARY/ABSTRACT

This program is for the proposed student/community recreation center for Wright State University, W.O.B.C. (western Ohio branch campus), Celina, Ohio. The campus is situated on a natural sloping site that reaches out to the St. Mary's Grand Lake which will frame the new recreation center and give a beautiful setting and view for the new campus/community building.

This program will aid the designer in his decision making role for designing a 73,383 sq. ft. student/community recreation center. The center will be a multi-functional service housing different activities for the students, faculty, staff and the community surrounding the campus. This tells about the goals of the project, but also gives a descriptive analysis of the user requirements for this building, and what should be considered in designing the new recreation center for Wright State University.
INTRODUCTION

Sociologist and economist believe that the leisure revolution that the United States is undergoing, will make the industrial revolution pale by comparison in its effect on the daily lives of individuals.

A conservative estimate puts the current recreation market at upward of $150 billion a year, approximately 15 per cent of the gross national product, and its growing.

In 1970 we spent $516 million on spectator sports. Horse racing attracted 71 million enthusiasts; auto racing 41 million; football games 38 million; baseball 37 million; basketball 22 million. Seventy million swimmers used our waters or the grounds near by. 32 million fishermen cast their lures; 12 million golfers swung their clubs on 9,000 courses, and 75 million pairs of legs pedalled bicycles.

According to the noted philosopher and futurist R. Buckminster Fuller, Health, physical education, and recreation may play a far more critical part in lives of coming generations than such educational systems disciplines have played in the past.

The purpose of the student/community recreation center for Wright State University branch campus at Celina, Ohio is to have a facility which is designed
to supplement academic life by meeting the requirements of social and recreational needs of the students and community.

Wright State's branch campus at Celina is new. It has one academic building at present, and a second academic building proposed for 1979-80. The campus is classified as a commuter college because dormitories are not planned or scheduled to be constructed for several years. The center will be valuable for these commuter students now, and all students in the future, as a place for retreat between classes. Since this building will have several functions, a student may choose to relax, study, indulge in recreational entertainment or choose some other area of his interest.

The justification of the building can be based on the needs of the campus, students, faculty, and people of the area of Celina, Ohio. The campus needs a building where facilities are provided in a central location and are easily accessible to the people attending or visiting the college. For example: eating facilities, gym, an auditorium, swimming pool, etc.

Some objectives that should not be overlooked by the designer are:

1) how the building should work with the surrounding site amenities, and the visual and possible
1) physical connection that this building should have with the other university facilities.

2) The designer should study the vehicular traffic flow. The automobile is only allowed on the periphery of campus, thus servicing the building could be a problem depending on the location of the building.

3) The campus must provide more than strictly academic buildings because of the location of the campus with the city of Celina, the need for student/faculty interaction, personal and group entertainment, and other basic functions which supplement academic and social life of a college campus.

The campus is located approximately two miles east of Celina. It has a rural landscape and at the moment is connected to the city of Celina by a state highway. As for the student and faculty interaction this should not only occur in an academic classroom, but also in leisure and recreational environments. Personal and group entertainment is another way which helps to strengthen and complement people as they interact in different learning situations.
GOALS AND OBJECTIVES

The university is a young campus and is basically a commuter school. There are no plans in the future for constructing housing units for resident students. With a large number of commuting students and people from the surrounding area, the center should be near the center of campus activity so that as many people as possible pass thru or near it each day.

PURPOSE OF THE CENTER

1) The basic purpose of the center is to provide those activities and services that are necessary to complement and enrich the educational environment at Wright State University and the surrounding areas.

2) A related purpose is to provide a "mesh" of social-cultural activities, both active and passive that will instill a sense of "place" in the student, faculty, and staff and a sense of involvement in the adjacent community.

VALIDITY

1) There are several distinct areas of validity for the proposed student recreation center: educational, social and cultural. Basically the recreation center facility is valid as an extension of the educational process. Students are social animals that must have a facility apart from the classroom in which they gather as individuals or in groups and engage in activities of a more social/cultural nature: theatres, activities, relaxing, organizations, etc.

2) The facility is valid in that it contains functions and services that the community can share in, thus developing good University
community relations.

3) As a support facility the recreation center provides those service functions, i.e., shelter, food services, meeting rooms, lounges, etc., that are necessary during the course of a typical day on campus.

IDENTIFICATION

1) The recreation center is the commuting students "place" or home between and after classes. This gives the student the opportunity to stay on campus a little longer for some extra-curricular learning activity.

2) The community, faculty and staff as well as the student can identify with the recreation center as the social and cultural center of campus and community.

3) In addition to the socio-cultural justification, the university must provide the student and faculty with a service center where they can eat, relax, and seek shelter.

4) The center with its varied functions, is a justifiable means for community involvement in facilities and activities, the community may not otherwise have access to.

STATEMENTS OF THE OBJECTIVES

1) A unity is required both in programing and facility location to get the commuter student to stay on campus and the same goes for drawing the community to this facility.

2) By centralizing the activities in a single location that is convenient to most students and community this will expose them to many activities that go on in facilities such as this.

3) The building must give the user a feeling of light, happy and fun atmosphere, but be very serious when its educational qualities
are exposed, a design that all would be proud to call their center.

4) It should have an excitement about it so that when the student sees it, he wants to know more about what happens inside and will want to keep coming back to it.

5) Design a student recreation facility containing the following major functions: administrations, food service, student activities, lounges, meeting rooms, theatres, gym, health club, student organizations and various mechanical support facilities.

6) Design a facility that satisfies the services, social cultural needs of the students, community, faculty and staff. Some of these needs are: a place to meet, relate to and exchange ideas with other people and to be exposed to art, film, plays, literature, etc.

7) Respond to educational goals, planning criteria, and needs established by faculty committees, administrators, and consultants.

8) Respond to and respect the natural characteristics of the site as an integral part of the design.

9) Respond to the needs and enthusiasm of neighboring community by programming functions and facilities that can be enjoyed by both the campus and the public.

10) All within the cost/benefits of resource conservation.
CHARACTER OF BUILDING AND FUNCTIONS

The recreation center can contribute towards gaining greater social and cultural respects to the campus and to the people of the Celina area. Having a place where people can gather and gain a greater respect for these aspects can only help people in their day to day lives. The auditorium, lounges, etc., which are facilities that will contribute to the learning process by putting people in varied situations and environments with different people. Therefore, the building can contribute something to every person who comes in contact with the facilities.

The recreation center will function mainly as an activities center. The activities range from physical activities such as basketball, swimming, billiards, and eating to attending meetings, plays, studying, and relaxing, plus many more. The recreation center will function for students, community, faculty, and guests. It was mentioned that people while boating may stop at the center for an outdoor or indoor activity, such as a concert, and then return to their boating. Conferences may be held in the meeting rooms or in the auditorium. Plays and other programs may occur in the auditorium, where not only students and faculty, but the community may attend and participate. The activities mentioned are a few of many which will occur
in the building. Therefore, the recreation center will render facilities for needed activities on a university campus for students, community, faculty and guests.

The majority of the functions of the building may be classified as public functions. For example: there are eating facilities, gymnasium, swimming, auditorium and lounge areas. In the future planning the recreation center could have outdoor recreational facilities which would also be public facilities. A boat dock could be one of several facilities which could increase the interactions of the community and college participants. Therefore, the recreation center functions are mainly open to the public with plans for more public facilities in the future.

There could be very few functions in the recreation center which could be classified as private functions. The administrative area could be classified as semi-private because it handles the programming of the recreation center activities, but is not directly in contact with the public. Other areas which are classified as private are mechanical facilities such as, pools filter system, incinerator, supply area, and custodial workshop. In general, the recreation center is programmed for public facilities.
DESCRIPTION OF CONTEXT

Tangible

Wright State University branch campus of Celina is located in the northwestern section of the state of Ohio. Major cities within a fifty-five mile radius are: Van Wert, Greenville, and Lima in Ohio; and Fort Wayne, Muncie, and Marion in Indiana. The city of Celina lies thirteen miles east of the Indiana/Ohio state line. This is an important factor because some students may be commuting from cities and towns in Indiana. Therefore, there may be an interaction of students who commute from Indiana as well as Ohio.

The university lies in Mercer County which is bounded by Van Wert County to the north, Auglaize County to the east, Darke County to the south, and the state of Indiana to the west.

The present land use in Mercer County, see table 1.

The city of Celina, Ohio is located on the northwest corner of Grand Lake St. Marys and has a population of approximately 10,000 people. Celina divides residential land into three densities which are: low density (two or fewer families per acre), medium density (four to twelve families per acre), and high density (seven to twenty seven families per acre). The low density residential land is situated in peripheral areas, most of which lie outside the proposed outer belt expressway. Medium density residential land makes up all other residential areas,
<table>
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<th>Developed Land*</th>
<th>Acres</th>
<th>% of land</th>
<th>Acres per</th>
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<tr>
<td></td>
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<td>100 persons</td>
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<tr>
<td>Residential</td>
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<td>15.9</td>
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<td>Commercial</td>
<td>182.5</td>
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<tr>
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<td>398.6</td>
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<td>Public and Semi-Public</td>
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<td>Conservation</td>
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<td>Grand Lake</td>
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<td>St. Marys</td>
<td>14,175.0</td>
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<tr>
<td>Agricultural and other</td>
<td>242,775.8</td>
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<td>Total Undeveloped Land</td>
<td>273,754.7</td>
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<td>Total Land in Mercer County</td>
<td>290,560.0</td>
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*The term "developed land" refers to land that is built upon, or is owned or used by the public.

Source: Carrol V. Hill and Associates
Community Planners
Columbus, Ohio
efficient movement of people and goods between population centers and traffic generators in all parts of the county. New highways consist mostly of circumferential routes.
except for 221 acres of high density residential land
which lies adjacent to the central business district
and the industrial corridors of the city. Celina has
grown in population of over 3,000 persons in the past
decade, and has made a substantial gain in commercial
and industrial profits through the years.

There are several adjacent influences which will
have a bearing on the design of the building. The
primary adjacent influence is the Grand Lake St. Marys
which borders part of the south side of the campus.
The university officials stipulate the recreation center
shall lie with relation to the lake. Other adjacent
influences are residential areas which exist on the
south east corner and the west side on the campus. The
north boundary of the campus is determined by an exist-
ing railroad line and still farther north of the rail-
road line exists a new thorough fare. Another item
which will have influence the campus is the existing
state highway 29 which divides the campus. Therefore,
the items mentioned influence the campus design, and
in turn influence the design of the recreation center.

The highway plan proposed for future years in
Mercer County is designed to provide for the safe and
efficient movement of people and goods between popula-
tion center and traffic generators in all parts of the
county. New highways consist mostly of circumferential
roads and streets around urban areas. Because of the existing systems of highways and its generally good condition, a good future system will be achieved by bringing deficient roads up to current standards of highway design and emphasizing construction of a few major highway proposals. Limited access highways or "bypasses" have been proposed for Celina, Rockford, and Fort Recovery. In all cases these are, or will be, relocated state or federal highways around urbanized areas. The limited access highway in the Celina area will affect the traffic flow on highway 29, which divides the Wright State campus. The new limited access highway lies north of the railroad track which borders the north boundary of the Wright State campus. This will eliminate the majority of the congestion where vehicular traffic enters and leaves the campus area. Thus, highway 29 has been relocated to the north of the campus, the existing highway 29 has become a secondary highway.

The site is overlain by topsoil averaging 8 inches to one foot in thickness and being somewhat thicker (up to a foot and a half in thickness) in the swale areas. The top soil is underlain by a stratum of clay with some silt and some sand, extending to depths varying between 9.5 feet and the bottom of the borings (15 feet). This stratum is relatively hard in most
locations. However, it is somewhat softer in the swale area which runs through the site. Below this stratum and extending to the bottom of the borings is a stratum of relatively hard, gray clay and silt with some sand and a trace of gravel. Ground water was encountered in one boring only, at a depth of 8 feet. The water was encountered in a 6 inch sand seam at this depth. Ground water was not encountered in any of the other borings.

In general, the soils encountered at the site are relatively high bearing. Throughout the depths of the borings; however somewhat lower bearing soils were encountered in the swale areas which runs through the location of the first building. It appears that the lower bearing material is confined to the swale area progressing through the site. In general the upper 3 feet is somewhat higher bearing, even in the swale area. Once the 1.5 feet to 2.0 feet of top soil and organic material is stripped from the area of the swale there will be at least 6 feet to 7 feet of fill in this area. Ground water should not present a problem to the installation of fill or foundations. It appears that the on-site materials is suitable for use as fill material at the site. All backfill for utility trenches, foundation excavations, etc., should be
placed in successive horizontal six inch layers with each layer being compacted to a dry unit weight equal to at least 90% of the maximum dry unit weight as achieved by the modified proctor test before the next layer is added. In no instance should puddling or jetting of the fill material be allowed as a compaction method, as the silty and clayey soils present at foundation depth will soften, and the bearing capacity will be reduced if water is ponded in the excavation. All topsoil and organic material should be stripped from the area except all parking areas, driveways, etc.*

*Source: Fanning/Howey Associates Architects and Engineers Celina, Ohio

The vegetation as far as trees, grass and shrubs on the campus is lacking. Since Wright State University branch campus is new, the existing land has had no development, except for the academic building located there now. The campus primarily exists as farmland, and in some areas is ready to produce crops of grain. There are sparcely scattered trees to the west side with a wooded area at the north west corner. The area to the north of highway 29 is largely pasture land composed of blue grass and clover. Over the entire area only a few shrubs of little value may be found. Therefore, landscaping will play an important role in
the development of interior and exterior spaces through out the campus.

It is important to recognize that as technology advances and leisure time increases, people become more aware of the quality of life about them. The demands for bigger and better schools, higher quality educational services, and more leisure time areas and facilities are constantly on the increase. Schools perform one of the most vital of public services—that is, the education of society's future leaders, citizens, and labor force. However, the importance of the neighborhood or community school system is often not recognized. As a result, many schools are over crowded, technically obsolete, generally deteriorating, poorly equipped or poorly staffed.
Public parks and recreation areas are also important. They provide athletic and aesthetic opportunities. They often provide areas for public assembly and athletic contests, just as school facilities do. As people become more concerned with the conservation of natural resources and the preservation of the environment in which they live, the demand for public areas and parks will increase rapidly. Since land values also tend to increase rapidly, it is usually best to acquire needed land as soon as possible. In planning the future park and recreation needs of Mercer County all existing recreational areas were retained and primary emphasis was placed upon developing Grand Lake as a regional recreational and tourist attraction. Smaller local or neighborhood recreational facilities were proposed in conjunction with new school sites. In planning for the future school needs of Mercer County, every effort was made to use existing facilities when space required to facilitate educational activities have diminished along with allocated money to finance the new structures.

The projected enrollment of the Wright State University branch campus at Celina, Ohio for the next twelve years is as follows:
<table>
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<tr>
<th>Year</th>
<th>Enrollment</th>
<th>PT</th>
<th>FT</th>
<th>FTE</th>
<th>Day</th>
<th>Evening</th>
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<tr>
<td>1976-1977</td>
<td>810 Total</td>
<td>500</td>
<td>310</td>
<td>470</td>
<td>270</td>
<td>540</td>
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<td>440</td>
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<td>260</td>
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<tr>
<td>1980-1981</td>
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<td>750</td>
<td>550</td>
<td>780</td>
<td>400</td>
<td>900</td>
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<td>1982-1983</td>
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<td>680</td>
<td>940</td>
<td>530</td>
<td>1030</td>
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<td>1984-1985</td>
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<td>760</td>
<td>1090</td>
<td>700</td>
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<td>1979-1980</td>
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<td>490</td>
<td>700</td>
<td>300</td>
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<td>1983-1984</td>
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<td>860</td>
<td>430</td>
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<tr>
<td>Year</td>
<td>Total Enrollment</td>
<td>FT</td>
<td>PT</td>
<td>FTE</td>
<td>Day</td>
<td>Evenings</td>
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<td>1250</td>
<td>810</td>
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<td>1987-1988</td>
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<td>1260</td>
<td>960</td>
<td>1320</td>
<td>1020</td>
<td>1200</td>
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INTANGIBLES

There are certain characteristics of the site which will change in the future, but at this time have no bearing on what is to be constructed. Dibble road, running north and south divides the campus. Along Dibble road on the north side of highway 29 exists an old farmhouse and barn. A small old cemetery exists on the north side of highway 29, in the southwest area of the master plan proposal of the outdoor recreational area of campus. There is a possibility of the cemetery being moved but no decision has been made as to what will be accomplished.

A row of trees exists along the lake shore on the southern boundary of the campus. The majority of the trees are in poor condition and the number which will remain has not been decided. Land acquisition may be a definite need in the future. If more land is needed then where to acquire the land may bring about some future planning. Therefore, characteristics which exist on the site are items which have an impact on the campus, and should not be overlooked.

The master plan for Wright State University branch campus which is seven years old, is already out of date. The recreation center does not have to adhere to the original master plan, but some planning for the location of the center should be done. The university has in
the planning stage a new technical building to be built just north of the existing building located on the site. The center should be located in the most ideal area of the campus since it is the center of all activities.

The university has not experienced the growth it has anticipated over the last ten years, but still predicts that the existing branch campus will some day be a university of its own.
USER REQUIREMENTS

Information Center-

Because manning such a single function throughout all the center operating hours is expensive, most centers cannot afford an information center unless it works in conjunction with services other then that of dispensing information. In addition, to the activities to which an information center can assist the staff or students who man it may help in typing, telephone answering, checking coats, selling tickets, running the lost and found service or the building switchboard, operating a duplicator, issuing equipment or performing any of a number of other routine tasks. To fully succeed an information area should be located near the entrance of the building.

A telephone, campus and town or city directory, street and highway maps, bus, airline and rail time tables are among the minimum equipment of the center. Campus maps, fliers, and college catalogues are often distributed here. Daily and weekly activity information should be available. And a student faculty directory should be made available also. Should the building have a paging and public address system, the controls may well be located here.

The information center should be attractive, since among other things it affords newcomers an initial
impression of the whole building.

**Lobby—**

As the center may be the scene of large gatherings it should be prepared for the sudden appearance of a large crowd.

The lobby's function is that of receiving arrivals and aiding in distribution throughout the building. Building and activity directors should be prominent and explicit to permit most of those who enter to find their way to their destination while acquainting all entrants with the events of the day. The information center should be obvious and convenient. Because the lobby adjoins the main entrance it should offer little in the way of impediments to traffic, not only to permit good circulation, but also because of a prime emergency exit. It should be wide enough to prevent the conversation groupings which inevitably gather there from obstructing others using the area.

**Ticket Sales—**

Ticket selling some place in the center is an extension of the centers service function. Location of the ticket sales should be such that purchases can be made as quickly as possible.

The equipment of the office varies with the number and kinds of sales. Obviously a cash register with several drawers, properly divided to hold tickets, which may be
of various sizes and shapes. If tickets are accepted at the booth room for receipts forms are necessary. A counting table, filing cabinet, chair and stool, adequate lighting and ventilation. Some sort of announcement board should carry the information such as dates, prices and places, and concerning the events.

**Lounges—**

Lounges lend themselves to multiplicity of uses, not the least of which is ordinary lounging. The casual conversation between classes, the last minute perusal of a textbook, the keeping of an appointment, or reading of a newspaper are representative of the informal, unplanned activity which occur in the lounge area.

Lounges should satisfy the following functions:

1. Quiet passive living room type area for relaxing, reading, etc.
2. Semi-quiet passive area for relaxing, reading and quiet conversation.
3. Passive area for group conversation and napping, substitute for "dorm room".

The flexibility of lounges indicates that that they may be called upon to house large groups with a consequent need for proper ventilation and lighting. Built in public address systems with several microphone outlets in the larger areas makes for flexibility.

**Reading Room—**

While all colleges have libraries, they seem
to be considered places primarily for work, so much can be done by a browsing or reading room to stimulate good recreational reading habits on the campus. Avoidance of the library blues may be achieved by using comfortable chairs with airconditioning, decorative plants, and proper lighting. Certainly atmosphere is important if the browsing room is to be the sort of place where students and others go for intellectual stimulation or satisfaction, or to while away some time. There is the possibility of combining music listening, art displays and reading rooms into a sort of cultural center with supervision and the issuing of equipment for all, handled from one control point.

**Music Rooms—**

Marked changes have occurred in the field of music listening during the last decade. Record changers, the long playing record, tape recorders, and hi-fidelity has increased tremendously the interests in reproduced music and could offer the center a real opportunity for improving the level of musical understanding and interest of their students.

Individuals listening to music may do so in booths, small rooms or lounges or varying sizes. They may be using headphones which will not disturb anyone, commercial combination phonograph radios and
or custom built high fidelity sets. Records and tapes may be kept with the player and used by anyone, they may be issued by an attendant, or they may be the private property of the student.

Exposing students to new experiences is part of education and bringing college students into contact with such cultural portions of the center as the music room and art exhibits is a desirable project not easily completed. There may be some danger that holding all music programs in the music room will become little more than a gathering place of the relatively few who are already convinced of the importance of music in their life. The presentation of both live and recorded music programs in lounges and other parts of the building may help to bring new students into the music room. If this is intended then pianos, amplifiers, record players and other equipment should be considered during the planning stage. As in the case of the reading room, efficient means of food catering to the areas should be incorporated in the building if coffee hours and the likes are anticipated.

Art Display Room-

The art rooms prime function is fostering of appreciation, and although lectures and similar programs may be offered there, it is an area for exhibits most
of the time.

Expansion of the art room may be achieved not only by enlarging the room but also by increasing its facilities for exhibition. Portable display boards and shelves may be constructed for large displays and moved into the art room when needed. Expansion of display area may be also obtained by utilizing corridor, lounge and meeting room spaces, and if this is intended, provisions in the form of wall moldings and display cases should be made prior to the blue print stage.

With esthetics the basic appeal of the art room it seems only natural to demand that the room be esthetically pleasing as well as functional. The museum look is not apt to entice students or others into it, to enhance the appearance of the exhibits themselves, to inspire gallery committees, nor to heighten the appeal of the room for other purposes. All walls in the room should facilitate east displays. Nearby storage of such portable equipment should be available and should be large enough for temporary storage of some furniture from the art rooms if traffic circulation during large exhibits demands its removal. Swivel spotlights in the ceiling to augment the normal illumination of the room provide the flexibility of the lighting needed.

To function properly the art room must display
its wares well, be enjoyable to use and easy to arrange. While a greater appreciation of art is a function of the art room, and one which should be served in every way possible, periodicals and books of art, print collections, lectures, illustrated talks, it is quite possible to interest students in doing their own works by displaying as much student art, crafts, photography and similar work as is warranted in the room.

The art room needs storage space for its portable equipment, auxiliary seating, its own collection, its circulating collection, for arriving and departing exhibits, and for crating and uncrating.

Cinema/Auditorium-

These activities could co-exist with each other, but since both may be similar, they both have different functions and requirements so it seems unfeasible to combine the two.

The cinema needs to handle approximately 300 people, a projection booth along with adequate ventilation and lighting for both areas. The area should be soundproof as not to disturb surrounding areas, there should be a lobby area for receiving, congregating, and dispersing of spectators.

The theatre still serves a two fold function, it should serve a lecture hall as well as a theatre space
for small experimental or traditional student, community, professional dramatic productions, movies, experimental shows, etc. There should be space for dressing rooms, lights, sound equipment, seating for 400-500 people, storage, music and all functions associated with a small theatre.

Gymnasium-

The activity area will be available to both men and women as well as to permit easy access to all areas from both the mens and womens locker rooms. If bleachers are to be used they should be roll away or folding bleachers, for efficient utilization of space. The traffic patterns for the building shall be carefully studied. Lockers, showers, and toweling rooms shall be centrally located in the building so that they serve all activity areas. Storage rooms for equipment and supplies shall be carefully planned and functionally located.

The gymnasium shall be able to handle several different functions, basketball, volleyball, badmitton, running/jogging and possibly a tennis court.

There are some dimensional sizes that should be adhered to which are: Basketball courts 50' x 94' for main court, two 50' x 84' auxiliary courts; volleyball court 30' x 60' with 6' clearing all the way around; badmitton court, 20' x 44'.
An exercise area or room shall be provided adjacent to the gymnasium. This space shall be able to handle a physical fitness machine, barbells, and isometric cables, etc. The floor of the exercise room shall be covered with a durable resilient material, the space shall also be adequately ventilated and lighted.

**Handball Courts**

One or more batteries of four-wall handball courts shall be provided. Handball courts shall be 20 feet by 40 feet long by 20 feet high. If the handball court/batteries are back to back they must be separated by a corridor approximately 10 feet wide and 8 feet high. A corridor located above shall be at least 12 feet high, this may serve an instructor or be used as a spectator gallery.

The corridors and galleries, either associated with or just adjacent to the handball courts, shall be illuminated with indirect lights. No fixture, such as heat pipes, ventilating ducts, lights or any other mechanical equipment shall project into the playing area. Ventilating ducts and light fixtures will be located flush with the ceiling surface. Refrigerated air conditioning, or at least forced ventilation
forced ventilation is essential for individual courts. The ventilation switch can operate in conjunction with the light switch. Climatic conditions may dictate separate switches.

**Locker Rooms**-

A locker room is necessary for the purpose of changing clothes and should be in close proximity to the gymnasium, swimming pool, handball courts, and exercise room. If the lockers are to be used in connection with the outdoor areas they should be located so the people will have direct access to the areas without going through the entire building. The floors of the locker rooms should be pitched to a central drain(s) to facilitate cleaning and washing. Floors should be of a non-slip surface. The locker room should be adequately ventilated and lighted. There should be a total of 300 lockers provided along with supportative systems.

**Natatorium (swimming pool)**-

The natatorium should be a large clear span room, with adequate heating and ventilating and humidity controls. Sufficient width must be pro-
vided for adequate deck space around the pool, the
deck surface should be of a non-slip surface. A
minimum height of 15 feet should be maintained over
a one meter board. All materials used in this area
must be moisture and chemical resistant. There should
be adequate storage room for pool equipment.

The pool shall conform to state or local regula-
tory agency regulations. Careful studies should be
made of soil mechanics, results of test borings to
determine best pool shell and foundation construction,
etc. There should be adequate space for pool handling
equipment, filtration of water, feeding chemicals
for disinfecting and control of ph, etc. The pool
shall conform to a minimum competition size swimming
pool of 37' x 75'. This allows for the use of six
lanes of competition. The pool deck area should be
between 12' to 15' wide.

SEMI-PRIVATE

Administration-

In the center there should be an area for the
director of the center. His duty is to oversee the
operation of the center. Also an area for an assistant
director and secretaries.

The equipment of the offices varies with the
function of each. Obviously a desk and chairs for
each office as well as filing cabinets, typing stands,
and a storage and work room are required.

Restrooms-

The floors of the restrooms should be of non-slip material. The amount of water used can make for wet, slippery floors and the chemical action of urine on concrete not only causes deterioration but unpleasant odors. Floor drains and hose outlets should be provided as it aids in cleaning as does wall and ceiling hung fixtures, such as basins, urinals, toilets and toilet partitions. A floor area devoid of obstructions and impervious makes for easier maintenance in this area. Forced ventilation with separate ducts from other areas is necessary to permit proper exhaust from the area and building.

Smoking occurs frequently in restrooms and ash trays are desirable. Traffic interference in restrooms can be lessened if fixtures are located on separate walls. Toilet rooms (one for each sex) backing up to each other and separated by a service space as codes provide, offer a plumbing saving and easy maintenance. Each room should be at least ten feet wide or what the code recommends and have its entrance shielded to prevent visibility from the corridor.

The placing and sizes of restrooms will be determined
by the function and areas they will serve or by the codes.

Employees restrooms allowing a degree of privacy in connection with a rest lounge will be provided. Locker rooms are a necessity and should be well ventilated as well as comfortable and attractive.

Food Areas-

Since the dining service is the main source of the center revenue and caters regularly to a large segment of the campus, it is extremely important that it be planned, constructed, and operated properly.

The purposes of the center can be partially achieved by dining services, since they by name and nature, perform the secondary function of service. The fulfillment of the primary educational function of offering the best possible social, cultural, and recreational experiences depends on the planners and organizers. As an important employer of student labor and in some cases an actual curriculum laboratory, it has inescapable educational experiences.

Whether or not the whole food service is located on one floor or several floors, it is certain that deliveries and pick up must be made from a street level. The receiving dock, receiving room and garbage and trash storage must connect with the street and a receiving
office overlooking the dock expedites opening doors, examining, weighing and counting goods and checking invoices.

A few of the many items to be considered in the general layout include:

1. Placement of a scullery or pot washing center in the kitchen
2. Arrangement of the supervisory offices to provide good vision
3. Placement of freezers inside walkins where possible
4. Prevention of cross traffic
5. Allotment of an area or room for thawing of frozen foods
6. Location of compressors and similar equipment in easy to reach positions
7. Inclusion of china and linen storage as well as storage for tools used in cleaning up spillage
8. Possible construction of walk in refrigerators next to each other
9. Possible use of labor from one area to another if needed
10. Location of the loading dock on a large loading area
11. Placements of patrons coat rooms and toilets near dining room entrances
12. Location of the kitchen in the center of the dining areas to permit services in several directions
13. Arrangement of enough area for purchasing
control to eliminate paying for goods not received, under weight, or of unacceptable quality.

Storage in the food area includes dry stores or nonperishables, refrigerated stores, frozen stores, and garbage and trash storage. Some may include several subdivisions such as freezers for meats, fruit, vegetables, and dairy products.

Soda fountains and grillrooms are really miniature food preparation areas. They receive, store, prepare, serve and dispose of food, have records to be kept and cleaning to be done.

Since some of the centers educational and service programs are carried out in the dining areas, they must do more than just house eaters. In addition to eating card playing, entertainment or speeches occur here. They may house displays or serve as a polling place. Meetings and private parties may occur here. Therefore, more than mere feeding stations, the dining rooms are really meeting places for people.

Meeting Rooms-

The need for many small meeting rooms does not eliminate the demand for larger ones. Enough of each room is expensive and the compromise of dividing large rooms into smaller ones by means of sliding or folding walls is widely accepted. Though it is a
compromise with faults centering largely around the acoustic problem. The very demands upon meeting rooms are reflected in the seating requirements. Unless each room contains seating equaling its capacity auxiliary seating should be available to increase the capacity of the rooms as demanded. Extra chair storage should be provided to permit removal of chairs from the meeting room.

The meeting rooms should satisfy the following functions:

1. Lecture, conference, meeting area for student, government, groups and clubs, and for community groups

2. Lectures, conference, meeting areas for campus sponsored conferences

3. Spaces for conducting different types of meetings, council, conference, living room and informal gatherings.

**Student Activities**

This is one of the main reasons for having the student/community recreation center: to provide some type of activity or recreation place where students or anyone else for that matter can let off their frustration or just relax. There should be a wide range of activities that the student could participate in. Some activity areas should have passive functions, card playing, television viewing, reading, etc. There should also be
an area for active functions. These could include table tennis, billiards, pin ball, basketball, etc. This could possibly be a good place for some type of rathskeller since most students enjoy drinking beer while they are relaxing or taking part in some type of activity.

This area should be a very pleasant area almost light, colorful, and a happy area where energies could be released on a dismal day (bad weather, flunking an exam), but a low maintenance area. There should be appropriate administration and storage of activities and equipment.

To go along with the activities there should be an area for student organizations. They should have a meeting and administration of specific student organization which should also have work and storage area. There should be an office and administration area for coordinator of student organizations.

PRIVATE AREAS

Delivery-

Regardless of the administrative devices used in receiving, the area requires a platform, an access road, parking space, and a room for immediate storage, uncrating, weighing and checking. Space left for additional parking and turning of trucks and for extension of an
unloading platform assists materially in expanding the delivery area to permit simultaneous loading and unloading. Placement of storage and service spaces to avoid long internal transportation or interference with public areas will eliminate wasteful unloading zones inside the building or long delivery areas.

Trash and Garbage Rooms-

The delivery area by its nature is the logical place for trash and garbage collection. A trash and garbage room should be adjacent to the delivery platform for ease of removal as well as deposits of crates and cartons resulting from unpacking. If an incinerator is included in the building it should also be located here to permit ease of removal of ashes and quick burning of the debris from unpacking. Each of the rooms should be separate from the other and have its own lock for securities reasons and should be of fireproof construction with fire detection and fighting equipment well distributed and visible.

To function properly trucks must be able to back up to the platform easily and leave promptly. Few deliveries are made door to door which means that an unloading area should be large enough to accommodate shipments if storage space or a working crew is not immediately available.
Storage-

Nearly all activities require storage and many, such as food, games, theatre, etc. areas demand specialized storage areas.

Storage areas should be large enough to provide sufficient working space for loading, unloading, or inventory taking, including the use of handcarts. Floor storage should be avoided, particularly in food areas to prevent possible damage from leaks. Storage areas should be cool, insect and rodent proof and protected from overhead leaks or backed up drains. Floors should be hard, smooth, non-slip, non-porous, on the same level as other floors.

Moving articles from receiving to storage to the point of consumption or use is an important function performed within the center building. Freight elevators, dumbwaiters, horizontal conveyors, hand trucks, etc. should be considered during the original planning and doorways, corridors and storage spaces should be built to permit the passage of whatever mobile equipment is selected.

Janitor Closets-

The kind of janitors closets varies some with the location. Some may require space for a linen cart, others a floor machine. In general the requirements are the same. The janitors closet should be large
enough to house a large mop tank, a small mop tank, a ladder (six foot) a wet-dry vacuum cleaner, a buffer and linen cart, and be equipped with a sink, a floor type hopper, hangers for dusters, brooms, and mops as well as shelving for supplies, bulbs, toilet tissues and the likes.
<table>
<thead>
<tr>
<th>Area Requirements</th>
<th>Min. Assignable Square Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entrance/Lobby</td>
<td>3,000</td>
</tr>
<tr>
<td>Reception/Information</td>
<td>400</td>
</tr>
<tr>
<td>Administration Area</td>
<td></td>
</tr>
<tr>
<td>Director</td>
<td>250 sq. Ft.</td>
</tr>
<tr>
<td>Ass't Director</td>
<td>150 sq. Ft.</td>
</tr>
<tr>
<td>Secretary</td>
<td>150 sq. Ft.</td>
</tr>
<tr>
<td>Workroom</td>
<td>150 sq. Ft.</td>
</tr>
<tr>
<td>Television Lounge</td>
<td>700</td>
</tr>
<tr>
<td>60 persons @ 10 A.S.F./station</td>
<td>600</td>
</tr>
<tr>
<td>Reading Room</td>
<td>1000</td>
</tr>
<tr>
<td>Art Gallery</td>
<td>1000</td>
</tr>
<tr>
<td>Music Room</td>
<td>800</td>
</tr>
<tr>
<td>Meeting Room</td>
<td></td>
</tr>
<tr>
<td>Conference type 2 @ 15 person @20 a.s.f./st</td>
<td>600</td>
</tr>
<tr>
<td>Food Service</td>
<td></td>
</tr>
<tr>
<td>Student Commons 150 persons @ 20 a.s.f./st.</td>
<td>3000</td>
</tr>
<tr>
<td>Food preparation and serving</td>
<td>1500</td>
</tr>
<tr>
<td>Bathskeller</td>
<td>2000</td>
</tr>
<tr>
<td>Employee's Room</td>
<td>600</td>
</tr>
<tr>
<td>Recreation Area (passive)</td>
<td></td>
</tr>
<tr>
<td>Billiard Room 4 tables @ 320 a.s.f./st.</td>
<td>1280</td>
</tr>
<tr>
<td>Table Tennis 2 tables @ 320 a.s.f./st.</td>
<td>640</td>
</tr>
<tr>
<td>Pin Ball area 20 machines @ 20 a.s.f./st.</td>
<td>400</td>
</tr>
<tr>
<td>Control desk and storage</td>
<td>200</td>
</tr>
<tr>
<td>Lounge</td>
<td></td>
</tr>
<tr>
<td>Living room type: 75 @ 20 a.s.f./st.</td>
<td>1500</td>
</tr>
<tr>
<td>Study conservation 50 @ 20 a.s.f./st.</td>
<td>1000</td>
</tr>
<tr>
<td>Vending Room</td>
<td>400</td>
</tr>
<tr>
<td>Auditorium/Cinema</td>
<td></td>
</tr>
<tr>
<td>600 seats</td>
<td>8000</td>
</tr>
<tr>
<td>stage</td>
<td>2960</td>
</tr>
<tr>
<td>prop. and costume storage</td>
<td>500</td>
</tr>
<tr>
<td>(2) dressing rooms 150 ea.</td>
<td>300</td>
</tr>
<tr>
<td>(2) restrooms 40 ea.</td>
<td>80</td>
</tr>
<tr>
<td>Projection booth</td>
<td>300</td>
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<tr>
<td>Student Organizations (offices)</td>
<td>2140</td>
</tr>
<tr>
<td>Recreation Area (active)</td>
<td></td>
</tr>
<tr>
<td>Gymnasium</td>
<td>9369</td>
</tr>
<tr>
<td>Natatorium</td>
<td>5700-6300</td>
</tr>
<tr>
<td>Exercise room</td>
<td>510</td>
</tr>
<tr>
<td>(3) handball courts</td>
<td>2400</td>
</tr>
<tr>
<td>Health club and locker area</td>
<td>6534</td>
</tr>
</tbody>
</table>
### AREA REQUIREMENT

<table>
<thead>
<tr>
<th>Facility</th>
<th>min. assignable square feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical Facilities</td>
<td></td>
</tr>
<tr>
<td>Mechanical room</td>
<td>500</td>
</tr>
<tr>
<td>Incinerator</td>
<td>200</td>
</tr>
<tr>
<td>Central Supply and delivery</td>
<td>500</td>
</tr>
<tr>
<td>Custodians workshop w/clean up</td>
<td>200</td>
</tr>
<tr>
<td>Janitors closets 10 @ 40 sq. ft.</td>
<td>400</td>
</tr>
<tr>
<td>Restrooms</td>
<td>2100</td>
</tr>
<tr>
<td><strong>total gross sq. ft.</strong></td>
<td><strong>61,153</strong></td>
</tr>
<tr>
<td><strong>20% circulation</strong></td>
<td><strong>12,230</strong></td>
</tr>
<tr>
<td><strong>total approximate square footage</strong></td>
<td><strong>73,383</strong></td>
</tr>
</tbody>
</table>
ZONING

Height restrictions, site coverage, potential variances, and setbacks are items which have no actual effects on the Wright State Campus. The land in the campus area has not been zoned by the city. The people of this area would not support the zoning issue, if confronted, because of the implied restrictions. Therefore, height restrictions, site coverage, potential variances, and setbacks have no bearing on the recreation center.

Parking on the Wright State campus is to be located along the east boundary, Dibble Road, and highway 29. The campus is to be designed as a pedestrian campus. The vehicular traffic is to be provided means of travel to and from campus only. Parking shall be designed for 1.3 students per car. Not all students have cars and have to seek other means to reach campus; thus, parking has a ratio of 1.0 cars/1.3 students. Also, when visitors attend activities on campus, such as the auditorium programs, meetings, and etc, they tend to have two persons plus per car. Therefore, parking design is based upon these objectives.

The Wright State campus is surrounded by many different land uses. On the south side of campus exists medium density residential, and Grand Lake St. Mary's. Along the east boundary, south of highway 29 exists
THE COMPREHENSIVE PLAN

more medium density residential, backed by farm land.

The area to the west of the campus is partially vacant
land, with some housing, but is expected to provide
more housing within the near future. North of campus
across the Norfolk and Western railroad tracks.
more medium density residential, backed by farm land. The area to the west of the campus is partially vacant land, with some housing, but is expected to provide more housing within the near future. North of campus across the Norfolk and Western railroad track exists farm land. Part of the farm land to the northwest is expected to be zoned industrial in the future, therefore, the Wright State campus is surrounded by several different land uses.

SITE

The student/community recreation center at Wright State University branch campus is to be located on a portion of land along the north shore line of Grand Lake St. Mary's. The shore line in this area runs from north east to south west. The land slopes downward towards the lake at an average of one foot in twenty five feet to the south west. The academic building located on the site is sitting on the highest point in this area of campus (886.0'). The lake elevation is 870.4'.

Along the lake shore exists a row of trees from east boundary to the west boundary. The tree trunks average approximately five inches in diameter with a few scattered throughout of 10-12 inches in diameter. Across the remainder of the campus to the south of
highway 29 exists three of four large maple trees with trunk diameters in excess of 18 inches. Therefore, there is little vegetation around the proposed site.

To the west 900 feet, and to the east 630 feet exist medium residential areas. The residential to the west has been established over a period of years, whereas to the east the residential is now in a land development stage.

The lake is approximately three miles wide at the university campus, and southwest of the proposed building site exists one of the few islands, approximately one mile from the north shore. The island now has no specific use, but people at times boat to the island during boating activities on the lake. The lake depth in this area ranges from two to twelve feet in depth. The bottom of the lake is relatively sandy along the shore and has great potential for boating facilities, as well as swimming, in the future. At different times throughout the warmer months of the year, Grand Lake St. Mary's has boat races and water skiing shows. Boat races range from limited outboard motors to unlimited hydro-planes. The lake also has facilities for skiing, such as a ski-jump, and on weekends the lake is often crowded with water skiers,
boaters and fishermen. The lake is a great amenity to the campus and to the proposed recreation center, and all precautions should be taken to gain the best views, uses, and advantages of the recreation center.

Through visual and researched material, the site analysis renders the following items:

a) The soil has relatively good compressive strength with very little problems with groundwater

b) The vegetation will have to be studied and designed with the help of a landscape architect to achieve the desired objectives.

c) The lake can get rough in only a few minutes when a wind blows from east or west.

d) The lake has an average depth of 6-8 feet.

e) The lake is approximately 9 miles long (east to west) and 3 miles wide (north to south).

f) The land is now used as a soybean field.

g) The land slopes from the northeast downward to the southwest at an average of one foot to twenty five feet.

h) The existing academic building sits on the highest point of ground to the south of highway 29.

i) The existing academic building is constructed with brick and precast concrete with a roof of dark brown asbestos shingles.

j) Parking will exist along the west and east boundaries of this section of campus.

k) Vehicular traffic will approach the campus by means of highway 29 and Dibble Road.
1) The entire university campus site is divided by highway 29 (running east and west) and Dibble Road (running north and south).

m) The campus is to be a pedestrian campus with the automobile used only to bring the people to the campus.

n) Medium residential (4-12 families per acre) exists to the east and west of campus.

e) There exists an island, approximately one mile off the north shore line of the lake.

p) City utilities such as gas, water, electricity, enters the campus on the south side of highway 29 at the corner of highway 29 and Dibble Road.
BIBLIOGRAPHY


Fowler, Philip, Jr. The Development of Student Activities and the Concerns of Programming For the Commuter on the Urban University. American College and University, April 1975.


Prestressed Concrete Institute, Schools of Prestressed Concrete. Chicago, 1968.


PERIODICALS


Both the books and the periodicals were very helpful in writing this program. Some of the books are older but were still helpful because some of them still pertain to present day campuses. The periodicals gave an insight into the student centers that are being built today and what the building requirements, functions and activities that are needed in the present day and for future use.
Site Analysis
3 - Concepts
HAS A CENTRAL PLAZA. SOME GOOD VIEWS.

- POOR CIRCULATION.
- POOR SERVICE ACCESS.
- BACK AWAY FROM THE LAKE.

- MAJOR SPACES HAVE VIEWS OF THE LAKE. GOOD CIRCULATION.

- POOR SERVICE ACCESS.
- NO DIRECT LINK WITH LAKE. MAY HAVE PROBLEMS WITH SWIMMING POOL BRIDGING THE LAKE.
Conceptual Design
Design Development
Final
Design Solution
The final design scheme is unique as it incorporates many energy saving ideas as well as other innovative structural and design solutions.

The design of the recreation center is distinctly broken into three major areas, cultural, physical and tied together with the social area. The social area is the bridge that spans over the lake inlet. The program dictated a boat dock because the university owns a boat and also to provide the community with added tie-ups for their boats and to draw them into using the center.

Basically this is a loft building type with removable wall systems and exterior panels. The building was designed so all interior partitions could be removed or rearranged depending on the space and user needs of the building. All systems (HVAC) in this building are designed the same way. This was done to give the building the maximum flexibility at a minimum cost.

**STRUCTURAL AND BUILDING SYSTEM**

The structural system is very basic. The main structural system is floor to ceiling trusses, which are staggered on every other floor. This was done to give the building maximum openness since no interior columns are used. I utilized a space truss system for the floor because of the flexibility it offered for longer span, spacing requirements, better for systems integration, and more economically feasible than bar joists. The interior partitions are removable and are mounted on steel studs which provide for easy erection and removal.
The ceilings in the building are either exposed or covered depending on the function. The floor systems that were used were flex-core which was used for the gymnasium flooring deck and ceiling over the natatorium. This was used for structural and moisture control with system integration. The floors are light weight concrete on metal decking with services penetration.

EXTERIOR SKIN

The exterior skin is aluminum panels with the windows integrated into panels with gaskets around the windows to provide an air tight seal. The exterior panels are also removable to provide for more window panels or to remove window panels depending upon interior room needs. The windows are triple pane on the north side of the building and double pane on the south side of the building to help control heat loss.

HVAC SYSTEMS

The HVAC system in the building is heat pumps with electrical resistance back up system for heating and cooling. The system also is able to connect up to the central heating and cooling system of the university in the future as the campus develops with minimum ease and cost. All duct work is exposed, color keyed, and integrated into the structure.

FIRE PROTECTION

Since the building is very open and exposed the need
for fire protection and safety was very important. The building meets recommended fire codes and beyond. The building materials used in construction varies between a 2 hour to 4 hour fire rating. The building is totally sprinklered with separate water and electrical system from the rest of the building. Along with the required alarm system, exits, and extinguishers, the building uses two detection systems. Smoke detectors are located in various parts of the building as well as heat detectors which are hooked into the central fire detection panel.