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A Proposed Guide for Playground Planning

Wayne Delbert Jensen
Central Washington University

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A PROPOSED GUIDE FOR PLAYGROUND PLANNING

A Research Paper
Presented to
the Graduate Faculty
Central Washington State College

In Partial Fulfillment
of the Requirements for the Degree
Master of Education

by
Wayne Delbert Jensen

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THIS PAPER APPROVED AS MEETING
THE PLAN 2 REQUIREMENT FOR THE
COMPLETION OF A RESEARCH PAPER.

Everett A. Irish
FOR THE GRADUATE FACULTY

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CHAPTER I

THE PROBLEM AND DEFINITIONS OF TERMS USED

Statement of the Problem. The purpose of this study was to investigate the importance of playground planning in the over-all school plan. One of the chief aims of the study was to demonstrate the need for larger school sites through the presentation of actual space requirements of various play areas needed in an adequate physical education and recreation program. The writer thought that a suitable explanation of the playground plan had to include a discussion of the importance of the playground to the entire community.

Limitations of the Study and Approach to the Problem. The field of investigation of this study has been restricted to outdoor facilities. The historical method of research was utilized. Information was gathered from a variety of sources including books, periodicals and published bulletins.

Definitions of Terms Used. Facilities includes buildings and adjacent play areas. Play areas may include baseball diamonds, tennis courts, softball diamonds and space for other group and individual sports, games and activities.

Equipment includes items of a somewhat permanent nature such as climbing apparatus of various kinds, basketball backstops and goals, mats, swings and other durable items.

Supplies include items that are expendable, or that have an average life of one year or less. These would be provided for annually in the budget.

CHAPTER II

IMPORTANCE OF THE PRINCIPLES OF PLAYGROUND PLANNING

Some Principles in Playground Planning. At the present time there is a concern for every child's health and development--a philosophy with implications for health and physical education programs. The provisions for these programs take space. They take planned space--costly space. The Plant Guide Committee (8:1) states:

Educational plants cannot be planned intelligently until the scope of the program, curriculum content, and basic education methods have been determined.

Applied to the physical education program, this means that the school site must take into consideration the space requirements for the selected activities which will constitute the curriculum and which will best fulfill the stated educational purposes of the school.

Unfortunately, many school districts have reversed the process. They have procured a school site without reference to the physical education and recreational activities to be carried on, and they directed school authorities to do the best they could with whatever space was available after all other school facilities had been constructed.

Actual planning must start with some understanding of the aims and objectives of a playground. A playground offers children an opportunity to run, to jump, to holler, to climb. It gives children a chance to play any number of games (with and without equipment), to play by themselves, with someone or with a group.

The old-time school yard, with its limited space and its restrictive traditions, is entirely unsuited to the new uses demanded by the new curriculum. The playground is nearly as important as the classroom in the conduct of the modern school, for it must furnish a place for open-air classes, for organized play and physical training both during the school day and after school, on Saturdays, and during the summer vacation. These new uses are creating a new condition, which warrants a far greater expenditure and care than the old-time yard ever received; therefore, the playground must be properly designed, constructed, and maintained in order to fulfill its true function.

It is now a commonly accepted principle (2:151) that the school should be used as a recreational and civic center for all of the citizens during the time that such use does not interfere with regular school programs. This factor, therefore, must be considered in planning for the total school site area and arrangement.

As in the case of planning the school buildings and its interior facilities, playground facilities can be planned only by determining the space required for recreational activities.

Area Requirements. In the design of outdoor spaces for education and recreation, factors requiring consideration include location of the various areas, safety, ease of supervision and control, utility and beauty. The extent to which these factors are incorporated in the plan, determines to a large degree the extent to which the facility serves its intended purpose.

Ideally, the elementary school should provide space for such games as baseball and basketball. These facilities will be used in the day by students and in the evenings by adults. Set apart from the area used for organized games, there should be an area in the playground for playground equipment.

The outdoor facilities should be as near the gymnasium as possible and yet far enough from the classrooms so that noise will not be a disturbing factor.

In planning, it is necessary to consider the education and recreation needs of school children and of the entire community. This necessitates facilities which will provide the pupils with opportunities to practice the skills learned in school programs and to participate in activities which require larger areas than are now provided on most school properties.

These have been the basic considerations in determining the allocation and utilization of the spaces indicated on the enclosed table, page 5.

Spaces allocated for preschool, paved multiple-use and apparatus, where direct supervision is important, should be located in close proximity to one another and to the building. The field games area may be further removed from the building, but should be easily accessible from it. The quiet games area and landscape areas, on the other hand, may be fitted more readily into the overall plan where space, topography and natural features permit.

TABLE I
URBAN OUTDOOR FACILITIES

Type of Area	Approx. space requirements (sq. ft.)			Description of Facilities
	Elem. School	Jr. High	Senior High	
Preschool or Playlot	10,000	10,000	10,000	Provides section with apparatus (climbing, Slide, see-saw), and open play area
Apparatus	10,000	10,000	10,000	Such apparatus as the balance beam, horizontal bar
Multiple-use Paved	30,000	64,000	64,000	Paved, all-weather surface for court games such as basketball and low-organized games and dancing
Field games	135,000	285,000	350,000	Facilities and space for baseball and other field games. A track is suggested
Quiet Activities	8,000	8,000	8,000	Space for handicraft, music and quiet games
Planting and Walks	25,000	40,000	70,000	Boundary and border planting and walks serving the various sections

Provision is made above for outdoor space to serve an elementary school of as few as three hundred or as many as a thousand pupils and to serve the recreation needs of the neighborhood. Limited variation in these space requirements will be necessary to serve larger or smaller school enrollments or neighborhood populations. Space requirements are based on a desirable program of education and recreation activities for which essential facilities are provided. (1:13).

Playground Equipment. The basic activities of children—climbing, sliding, swinging, whirling, racing and jumping, have remained the same since the time of the caveman; and these will probably still be the basic activities of children in fifty or even three hundred years. Consequently, we should adapt our playground equipment to the basic motions. Equipment used in the elementary school includes see-saws, slides and jungle gyms. In this same area should be benches and drinking fountains.

Older children, youth and adults, probably need less formal equipment and more game facilities. Facilities in terms of goal-posts and nets are, of course, musts for such formal games as tennis, volleyball and basketball, baseball and football. Bicycle racks placed in safe and strategic places fill a well-felt need in many situations. Again there is the need for seating to watch others at play, or just to enjoy nature.

The following general principles may serve as a guideline to determine the adequacy of school playgrounds:

- (1) Adequate space and the efficient utilization of this area must be provided and planned for a variety of facilities suited to the needs of the children and youth attending the school.
- (2) Playgrounds should be planned to allow for efficient supervision. Facilities for younger elementary children should be located in areas well protected from older children.
- (3) Adequate and convenient toilet facilities and drinking fountains should be available.
- (4) Playgrounds should have a neat, clean, and attractive appearance.

CHAPTER III

PLANNING FOR SAFETY

Planning for Safety. "Play is a biological and social necessity for children. It is the most fundamental thing about a child. The value of play is manifold. It increases the physical fitness of the young; it develops cooperation, a sense of mutual rights, sportsmanship, obedience, loyalty, friendliness, democracy and other qualities; it is an antidote for anti-social tendencies; it affords mental development and acts as a mental stimulus. It is in his play that the child gains control of his body, that he acquires accuracy and precision in motion, and in judging distance, sights, and sounds. Play is a matter of public concern, and the community should not only have ample space for play but should see that proper consideration is given to the environment of the places in which play is carried on." (3:1)

Playgrounds must be planned for maximum safety. Site planning for area safety is a consideration which has been frequently overlooked or minimized. Playing surfaces and equipment have been developed with little understanding of hazards involved in particular activities. The need for more thorough planning for accident prevention is indicated at all grade levels.

The total needs of the physical education, recreation, and competitive sports programs must be considered in the specifications for school site development, and ample areas provided to permit suitable, safe development. The delineation of the activities to be pursued on the school site is a responsibility of the school; the development of a site plan which

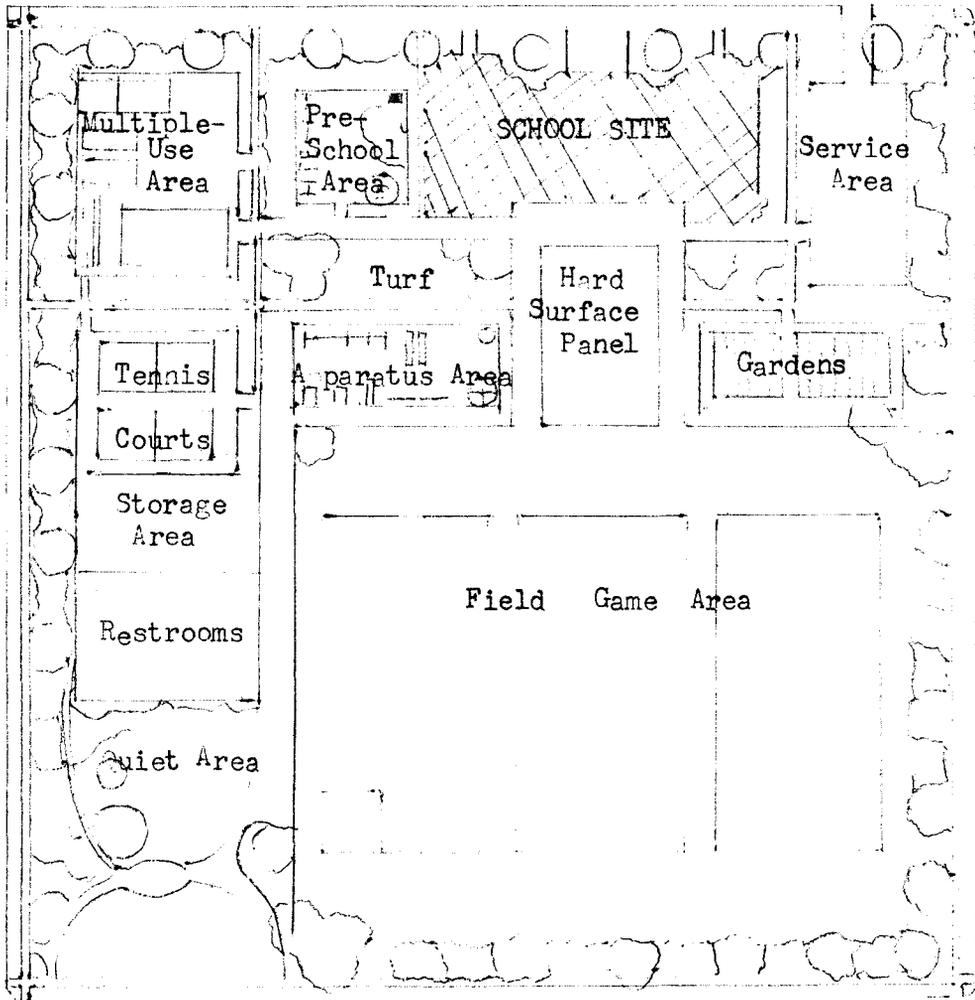
safely arranges needed areas is the responsibility of the architect. Unless ample space is provided, the architect must cramp unlike activities into limited areas, and either minimize safety zones around playing areas or delete certain activity areas from the site plan. Some idea of a proposed planned playground is presented in Figure 1, page 9.

A safe playground is not the result of chance. Safety can be assured on a playground only through the action of competent teachers. Children must be impressed with the importance of safety and can be instructed in procedures that assure safe play.

Safety of Equipment. Equipment hazards result from unsuitable devices or design, improper location or installation, and inadequate supervision and maintenance.

While it is true that most, if not all, accidents are the result of carelessness or the disregard of good practice, it is difficult to supervise completely a group of pupils engaged in free play. Part of the solution to the playground accident lies in group safety education, but some playground equipment seems better deferred to later ages or grades. Preceding the acquisition of equipment items the value of each device in the development of coordination should be considered and the furtherance of the pupil's physical development and enjoyment, with advantages carefully weighed against hazards.

In addition to correct installation, hazards may be curtailed by suitable separation of devices, the provision of full safety railings and handholds, and design which eliminates projections or sharp corners.



PROPOSED ELEMENTARY SCHOOL PLAYGROUND

FIGURE I

Handrails should be of suitable design and at such heights as to be readily grasped by children. Projections of bolts, nails, metal stripping or wood should not be permitted; although design with exposed bolts are not best, rounded surface cappings are considered acceptable.

The importance of maintenance to safety cannot be over-emphasized. All playground devices should be thoroughly inspected during the season when they are not in major use, and all weakened and defective features repaired. Of equal or perhaps greater importance, however, is the regular inspection of these devices during the season of usage, and the encouragement of supervised inspections during daily operation. Hazards or defects which are discovered should be reported immediately, and orders entered for their correction. Only through a specific procedure for inspection, reporting, and repair can the benefits of safe provision be secured.

CHAPTER IV

PLANNING THE SURFACE

The problems of surfacing are complex and unique in every school playground. It is, therefore, advisable that technical engineering aid be obtained to make suggestions or to draw up specifications for surfacing or developing playground areas, regardless of the type of surface. Preparation of plans with their accompanying specifications is essentially an engineering function applicable to the individual case under consideration. It must be borne in mind that all surfacing jobs should be considered on their own merits and designed for the particular locality involved. (9:10).

Large sums of money are expended annually in the installation and maintenance of playgrounds and it is, therefore, necessary that school administrations be familiar with the merits and disadvantages of the various types of playground surfaces available for their use. It is essential that they understand the qualities desirable in a playground surface. Although other factors such as cost are important, it is obvious that the surface, if satisfactory, must be suitable and adapted for the physical education program. The final judgment of the playground surface rests entirely in the extent to which it meets this test. The fact that no one surface provides all the desirable qualities probably makes the question of playground surfacing a troublesome and difficult problem. It is, therefore, advisable to decide which are the most important qualities for a particular area and to adopt a surfacing that will most nearly meet these requirements.

Types of Surfacing. The materials in most common use include sand, gravel and clay in various combinations, turf, cinders, crushed stone, concrete, various types of bituminous materials and a number of special patented surfacing.

Turf. Turf is generally conceded to be the most ideal surface for most forms of children's play as well as many highly organized games for youths and adults. Turf should be used for all playing areas except special game courts, and limited size wet-weather areas should be provided for elementary pupils. Where pupil traffic is concentrated, the maintenance of turf is difficult. Its use is not practical on intensively used playgrounds as it is almost impossible to maintain it without periods of rest for the recovery of the turf. Strains of grasses should be selected that thrive in the locality in which they are to be used and that are resistant to intensive usage. It is suggested that the state agricultural college be contacted for information on specific varieties.

The disadvantages of its use are due mainly to the fact that it is not suitable for play when the grass is wet, as it becomes entirely too slippery, and is very easily damaged. It cannot be used when the ground is thawing without harming the turf. Many games which require an accurate bound of a ball or a sure, smooth footing are better being played on some other type of surfacing.

Sand-Clay Surfaces. The use of a combination sand-clay surface is used by many schools. The surface apparently gives a high degree of satisfaction during most of the year, although a great majority of this type cannot be used to any large extent during wet weather or when the frost is leaving the ground.

Crushed Stone Surfaces. The use of various types of crushed stone surfacing is apparently in wide use, although open to criticism. Playgrounds are sometimes covered with a layer of coarse, sharp stone which provides a loose surface on which it is difficult to play active games and which cuts and bruises children who fall on it. The use of hard crushed stone as a top surface for playgrounds should be absolutely avoided, although on the other hand there are various types of stones which are used with satisfaction when a sufficient quantity of fine binding material is included.

Bituminous Surfaces. Various types of bituminous material have been used for playground surfacing and during the last few years their use has increased rapidly and indications point to even greater use in the future.

These materials are particularly adaptable for use of small, intensively used playgrounds and for all special game courts such as tennis, handball and volleyball. The advantages apparent from the use of these materials are that the playground can be used throughout the entire year; it can be used immediately after a rain, the expense of maintaining it is negligible; repairs to cracks or depressions may be readily made; and the surface can be played upon with any kind of shoe. It affords a surface suitable for practically all types of games and activities and it permits faster and more accurate play than clay or other surfaces unless the latter receives continuous maintenance. Another good feature is that permanent lines marking the boundaries of various game areas may be painted directly upon the surfaces.

Some objection has been advanced to the use of the bituminous materials because they are abrasive, non-resilient, dirty, absorbant of heat and unpopular. As the exact opposites have also been offered, it is indicated that there is a wide difference in the types of this material available and as its continued use is likely to become more widespread, it is important that the relative merits and disadvantages of the different kinds be given a careful study.

The penetration type of rock and asphalt surfacing, cold asphalt surfacing and the hot asphalt surfacing have been used with considerable success. In addition, some districts are utilizing some type of cushion surfacing with the inclusion of sawdust, granulated cork and other highly resilient materials in the final seal coat applied to the material.

Concrete. It is generally agreed by most recreational leaders that a concrete surface is not satisfactory for general playground purposes because the surface is too hard, lacks resiliency and is likely to prove harmful to the feet and ankles of the children who play on it. However, it is being increasingly used as a surface for special court games such as tennis, hand-ball, etc., and while it is recognized that there is objection to the use of such courts, it is generally felt that the effect of the hard surface may be eliminated if thick soled rubber shoes are worn by the players.

In addition to the disadvantages already stated, unless conctantly repaired, concrete usually develops large cracks or disintegrates, and the result is an extremely hazardous surface.

Drainage and Grading. Unless consideration is given to drainage and grading on a playground, a poor play surface is going to develop, making the area unsafe and also adding to the maintenance costs. Grading is the process of changing the existing levels of the playground surface in order to provide suitable spaces for various activities and to facilitate proper drainage. There should be sufficient slope to prevent water from standing on the playground, but not so much as to cause the surface to be eroded in case of heavy rains. A slope of 12 inches to each 100 feet is usually recommended on soil or turf; a slope of 6 inches is recommended on paved areas. (2:31)

Proper drainage removes excess surface and ground water which would otherwise interfere with the recreational use of an area. Surface water is usually carried off by inlets and catch basins which are connected with a storm sewer. Ground water, on the other hand, is collected and removed by drains laid under the surface of the area.

Fencing. Fencing is frequently required around facility units for the purpose of isolation or segregation, to aid in the supervision, and for the protection of participants, spectators, property and the general public.

Exits and entrances through boundary fences should be strategically located to provide safe, easy and direct ingress and egress.

CHAPTER V

FINANCIAL ASPECTS

Planning. Careful consideration should be given to both construction and maintenance costs when planning playgrounds. Multiuse areas will aid in the economy of expenditures. Careful planning, with the aid of technical assistance, will provide a properly graded and drained play area which should reduce the cost of maintaining the school grounds.

The first thing that must be done in planning is to establish a master plan for the playground. School districts should start to budget portions of school funds each year for the acquisition of the facilities, equipment, and other items noted in the master plan. (1:32).

Budget Administration. The extent to which the ideal playground can be provided depends upon the finances available to support it. Any realistic appraisal takes into account budgetary considerations vital to program operations. In any situation where public funds support programs, it is vital to make the best utilization of money provided.

When new construction is taking place, expenditures for the development of the play area must be included in the over-all building costs.

Financial problems unquestionable are great. However, much can be done through administrative leadership to achieve the tools needed for physical education by soliciting the aid of voluntary, local, county and state governments as well as parents and other interested individuals.

CHAPTER VI

CONCLUSIONS

The need for larger school sites is universally acknowledged by those concerned with improved elementary and high school programs. To comprehend this need requires more than merely its constant reiteration by experts. This study had for one of its chief purposes, therefore, the demonstration of the need for larger school sites in specific terms through the presentation of actual space requirements of various play areas needed in an adequate physical education and recreation program for different-sized schools. This is irrefutable justification for larger play areas that anyone, whether he be layman or professional educator, can understand and accept.

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