DESIGN AS IT RELATES TO MAINTENANCE

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Introduction

The subject assigned to me this afternoon "Design
as it Relates to Maintenance" at first seems of quite
limited scope. Maintenance would appear to be the most
lowly and the most humdrum of all of the aspects of
park development. Careful examination, however, indi-
cates that the first impression is a most misleading
one - the scope is really very broad and inclusive.

Insofar as our urban areas are concerned, the park
systems have a threefold purpose:

(1) They provide areas for recreation both active
and passive. Incidentally, the "passive" aspects should
not be discounted - a survey made of one midwestern
city's park system indicated that 85 percent of the
persons using the parks used them for passive rather
than active recreation - and this included daytime use
only.

(2) The parks preserve and protect areas of natural
scenic beauty for the perpetual enjoyment of this and
succeeding generations.
(3) They make land in stream valleys and similar areas into attractive components of the urban area.

Now, when we speak of design as it relates to maintenance, what we mean is that we shall develop park systems meeting these purposes with the maximum of efficiency and economy. In this connotation design relates to maintenance in two broad areas which are labeled, for want of better terms "external factors" and "internal factors".

**External Factors**

External factors refer to those aspects of a park system dealing with the location, area, and adaptability of the various individual parks that comprise the system. These might equally well be termed "city planning" factors.

**Standards to be Followed**

In preparing comprehensive city plans for the usual midwestern city, our office endeavors to provide a total park area of two acres for each 100 persons. One-half of this is to consist of forest preserves, or similar natural areas largely left in a wild condition and with only a limited development. In some cases state or county parks provide for this need but in others the municipality must shoulder the responsibility. Of the other one acre per 100 persons of park land, one-half should be in large city parks containing golf
courses, picnic areas, museums, lakes, and such facilities that are of interest to the entire community, the remaining half should consist of a series of neighborhood parks, each with a minimum area of ten acres, but better with a minimum of 20 acres. Ideally each neighborhood park should adjoin or contain an elementary school and the two, in combination should form the neighborhood center. The neighborhood park is the real backbone of the park system.

Relate of Park Size to Maintenance Costs

At this point, you might well ask what relation these theoretical standards have to maintenance costs. Investigation reveals that they have a very definite relationship. An analysis of maintenance costs in a large park system in the Pacific Northwest (where plant material grows very easily) indicated that the annual maintenance costs per acre for parks of less than five acres was at least $500 per acre and got as high as $4200 per acre in one instance. For most parks of five to 30 acres the maintenance cost was $300 to $500 per acre while, for the parks of more than 30 acres, with one exception, the maintenance costs were $200 per acre or less.

A similar study of the St. Louis park system revealed that, ornamental parks cost $2000 to $17,500 per acre per year to maintain, playfields from $900 to $4000, and the larger parks from $225 to $350 per acre.
A park system that contains a great number of small parks - i.e. parks of less than five acres - is not only difficult and expensive to maintain but provides but little in the way of recreational or other park values.

Of course, in almost every large subdivision plat, we have odd fragments of unusable land that the subdivider wishes, in his generosity, to give to the city to augment its park system. What are we to do with these? In a few areas we think a solution has been found. This is to simply require the subdivider to set up a trusteeship in his restrictions which includes a small subdivision tax levy. The local home owners then maintain their own small park areas. As a side benefit, the organization required to do this is a very effective instrument in maintaining neighborhood interest and property values.

Adaptability of Park Sites

In addition to a minimum size, park maintenance is greatly simplified when the park site is naturally adapted to - or suited for - park use. Large parks should certainly be located on sites of some scenic interest. While neighborhood planning should guide the location of the neighborhood parks, here also it is frequently possible to find a small wooded area, an interesting ravine, or even a small lake. The
neighborhood parks of Minneapolis are a splendid example of this type of park site selection.

The point here is a simple one. As one example, it is cheaper to maintain existing trees even "poor" varieties such as cottonwood or soft maple than to try to nurse newly planted saplings through three or four years of drouth. It is easier to maintain a park that looks like a park from its very beginning.

In some cases, however, a considerable amount of construction is needed - extensive grading for needed play areas, filling of rock quarries, etc. - when we have to do the best we can to make a park out of land left over from other uses. Even where such adaptation is well done, higher maintenance costs result than when the original site was well adapted to its basic purpose.

In this connection, park systems occasionally have park lands given to them. Unless such lands are adaptable for park use and are a part of the community's master plan for its future park system such gifts had better be refused - unless of course the donor provides that you may sell the land and buy other lands better located.

One further point should be mentioned in relation to this matter of the adaptability of the park site itself. We prepared a comprehensive plan for a mid-western city in which an integral part of the proposed
park system was an elongated park strip of from 200 to 1000 feet wide extending several miles along a major drainage channel that traverses the city. The superintendent of parks has opposed this improvement because the proposed park would be expensive to maintain and provide only a limited active recreational value. From his point of view he is right. However, if this stream valley is not used for park purposes, it will eventually be absorbed by residential uses and a few commercial uses — and not very good ones either in a low area such as that. Then the City will have to build, at considerable expense, an enclosed storm sewer. Instead of an attractive area inducing high values in adjacent lands, the stream valley will be a nuisance and a hindrance to city growth and development.

We feel strongly that the highest and best use of this stream valley is for park purposes and that the park department should assume the responsibility for its development and maintenance even though the responsibility may be a heavy one and though there may be other areas where park money would appear to go further.

Each of the agencies building the city seems to be tending to become more and more narrow minded in its viewpoint. The highway people are concerned with
highways and nothing else. School officials care only for schools, park officials for parks, sewer officials for sewers, etc. No one cares for the city as a whole and consequently the city as a whole - or as an urban environment - is a mess.

**Unbalance in the System**

An unbalanced or inadequate park system also adds to maintenance difficulties. Where there is not enough park land, facilities are so heavily used that maintenance becomes very difficult, particularly in connection with landscape features. An unbalanced system whose parks are not distributed in accordance with population density always causes trouble as different standards of maintenance must be applied to the underused and overused parks.

**Internal Considerations**

Turning from the external factors, let us examine some of the considerations entering into the design of the park itself that reflect directly on maintenance costs.

**General Design**

First, the general design of the park area must be sound. We must know the purpose of the park area, the population it is to serve, and the recreational needs that it is to fill. There is no reason to build or maintain tennis courts for people who are interested
only in softball or provide a small children's playground in a neighborhood where there are hardly any children.

Second, the design should be adaptable to change as the park will be there for longer than the current population and its "fads" in recreational activities. We should use simple, large scale designs such as the Lansing, Michigan playfield which can be adapted easily to a great number of outdoor sports.

There is a very flexible boundary line between "capital improvements" and "maintenance" costs. The adaptation of our parks to new needs is probably in the "capital improvement" classification strictly speaking. However, I am sure that the constant day-to-day changes in parks brought about by new needs are mostly classified as "maintenance" in most of your park budgets.

The third general design factor is in relation to the improvements themselves - the buildings, roads, walks and similar features. These should all be of simple and sturdy design and construction built to last and to last with little or no maintenance. This is frequently a difficult line of reasoning to sustain before the city council. Adoption of design standards for major park improvements by the park board or city council would be helpful. This is the procedure
successfully used by many street, sewer, and water departments. With officially approved standard specifications for walks, drives, parking areas, park buildings and the like, it will be much easier to prevent the temporary or substandard improvements that are such a maintenance headache. If we can get good improvements the first time we can save maintenance costs all the time.

Park improvements should be restrained in scale and subservient to the landscape in character. Park improvements are merely means to park enjoyment and not ends in themselves. Modest and inconspicuous improvements are easier to maintain.

Accommodating the Automobile

The automobile has had its impact on the parks as it has had on all of the other parts of the urban area. Our use of the automobile is changing also. Because of extreme highway congestion and actual physical danger, the Sunday ride in the country is disappearing. This ride formerly included a slow tour over meandering roads in the city park as its high spot and most of our older parks include road systems designed for this meandering Sunday afternoon tour. Today, however, while there is a residue of such use, we drive to the park to do something - have a picnic, enjoy a scenic view from an overlook, watch a game,
or in some cities even to see an opera. This is good because we can now design our parks to provide a minimum of road mileage - just enough to get the cars to a parking lot from whence the people can walk to their objective. We have made a number of plans for parks where substantial mileages of roads have been eliminated and more of this could be done.

The automobile is destructive in more ways than one. Except in a few extraordinary areas such as Hawaii it is not possible to drive cars over lawns without ruining them. For numerous reasons park users will try to drive cars into every possible part of a park area. All park drives and parking lots should have a vertical eight or nine inch curb to make it most difficult to drive a car off the road. Keep the cars on the pavement; this will save maintenance costs.

If we confine the cars to the paved areas we then find ourselves with an effective instrument to control and properly distribute the maximum intensity of park use. All we need to do is to relate the capacity of the parking spaces to the maximum number of people the area within walking distance can accommodate.

The Pedestrian

Upon leaving his car, the park user becomes a pedestrian. The park design should provide a direct,
or reasonably direct, walk of good width and surface to take him where he is going. The human being is indefatigable in his search for the "short cut" and will wear an ugly path in that location almost in spite of anything you do. The only answer to this is to find the short cut first and pave it for him. The newly paved diagonal walks in the landscaped squares in the St. Louis civic center are an obvious demonstration of this principle.

**Planting**

The plant material in a park - the trees, shrubs, the grass, and sometimes the flowers - is always of interest to the landscape architect. These living things account for a big part of park maintenance costs - for planting, trimming, cutting the grass, etc. Here I would go back to previous remarks concerning adaptability of the park site. Established native plant material should form the basis for the park planting.

Frankly, I don't think we are making much progress on the landscape planting of parks. When we review the old designs of Frederick Law Olmstead or Jens Jensen or see some of their parks today we find a grand scale and a simplicity of design almost totally lacking today. These older parks were primarily compositions of trees and grass. Shrubs were used
sparingly, if at all, and, when used, were placed in great masses of single, easily grown, often native, varieties.

Every city should, of course, have an arboretum where as many varieties of trees and shrubs as possible should be grown, observed, and admired. However, there is no reason for us to try to make an arboretum out of every park. We need simple planting designs of three or four tree varieties and one or two shrub varieties, all varieties chosen because they may be easily grown and maintained. It is possible to make a beautiful and most interesting composition of one thousand trees all of one variety. One thousand trees each of a different variety is but a hodgepodge — and each tree has its own peculiar maintenance problems.

Of course, with our experience with blights and viruses we can't depend upon any one tree or shrub and those that we use should be blight and disease resistant insofar as we know now.

We will not go far wrong if we limit ourselves to native material used in natural combinations and situations and leave the exotic to the nurseryman and homeowner. Minimum maintenance should be the criteria in choice of varieties. Extreme simplicity should guide the planting design. There should be no tiny shrub beds and certainly no individual shrubs to mow and trim around.
Modern architects frequently use a modular design, obtaining economies in repetition of the same dimension. We need modular park design, with the design module being the width of the grass strip that can be mowed by one pass of the mowing equipment.

Flowers are a difficult problem. There are places in a park system where they are desirable and appropriate. There are also easily grown hardy perennial flowers such as the day lily that could be used more. However, I do not know of a flower that does not require weeding. No flowers at all are better than an unkempt flower bed.

One final comment on planting. Many park systems would be greatly improved if somehow, in the middle of the night, about two-thirds of the plant material could be made to quietly disappear.

Summary

It is almost impossible to talk about park maintenance without considering all aspects of the development of the park system, both the external and the internal factors. It would seem, however, that this emphasis on maintenance costs is a symptom of a basic difficulty of great significance - a basic attitude of defensiveness, of pessimism in regard to urban park systems.

A frequently heard comment on plans for expansion of a park system is: "We don't need any more park
land, we can't maintain what we have". Lack of any provision of open space in rapidly growing urban areas has attracted national attention. This is one of several crimes we have committed in post war urban expansion.

You won't find the highway people worrying about maintenance problems. They're just worrying about how to spend the billions of dollars the taxpayers have rushed to give them for new highways. They organized; dramatized their need; and got their money.

We must do the same. Parks are just as important an element in the urban pattern as the highways - and a good case can be made for their being more important. Certainly park people, used to a starvation diet, can make a major contribution for much less money. Maintenance and maintenance costs are important. Of greater importance is that our communities provide for the basic need of our urban population for park and recreation area.