LANDSCAPE DESIGN WITH PRAIRIE PLANTS

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INTRODUCTION

> Modern man with his great knowledge has it within his power to create on this earth a paradise beyond his fondest dreaming. But he is failing. And he will fail so long as his plans are conceived in obvious and heavyhanded violation of nature and nature's principles...
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> For the moment, it seems, we have lost touch. Perhaps, we must look back. We must regain old instincts, relearn old truths. We must return to the fundamental planning wisdom of the gopher building his home and village and the beaver engineering his dam. We must return to the planning approach of the farmer working from day to day - fully aware of nature's forces, forms and features; respecting and responding to them; adapting them to his purposes. We must rediscover nature.
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> John Ormsbee Simonds, "Landscape Architecture"

What might we discover in the nature of the prairie that might prove adaptable in the designing of our modern landscapes?

THE INHERENT BEAUTY OF THE PRAIRIE

> In desert places grew thorny plants and spiny creatures, in forests tree-dwellers and browsing beasts. On the great continental plains wherever grass wove her garment for the naked earth, the grazers chewed their cuds. In the primeval pastures, streams ran clear, and clean winds blew, and nomad man came to follow the herds, adapting to the prairie as it was.
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> "Grass Land" by Jim, Alice and Steven C. Wilson

The character and quality of a prairie landscape result from many factors in addition to its unique vegetation, but it is this vegetational aspect which most clearly separates the prairie from other landscape types. Although trees and shrubs may be present, the dominant vegetation consists of grasses and other herbaceous plants commonly referred to as forbs. The heights of the various grasses and forbs may vary from a few inches to six or eight feet; since most of them are below our "eye-level", they seldom obstruct our view of distant horizons. "The Land of the Wide Skies", as Jim and Alice Wilson have referred to it, is a most appropriate way of describing it in terms of human experience.

Another aspect of the vegetation that appeals strongly to our human emotions is its great variety of species, and the infinite ways in which they are interrelated. There is variety of size, form, color, movement, and seasonal display to excite our visual and esthetic senses; vari-

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ety of fragrances, flavors, and textures to reward our senses of smell, taste and touch; the prairie sounds include unique wind-songs and countless songs and calls of the insects, birds, and mammals residing within it or migrating across it. Each plant species also expresses its own kind of beauty and identity through its foliage, flowers and fruit.

The beauty of the prairie landscape is more than grass and forbs and birds and bees. It is also hills and valleys, lakes and rivers, steep rocky bluffs and low-lying flat-lands. Some prairie landscapes appear in sharp contrast to adjacent forests or groves of trees; others are separated from forests by areas of savanna or scattered trees. Special, individual kinds of beauty result from the various combinations and juxtapositions of these different vegetational types.

A prairie occurring on rolling sand hills, is distinct from one occurring in glacial potholes, visually and esthetically as well as culturally or ecologically. A prairie opening surrounded by trees may have a kind of private or intimate appeal not found in an exposed "goat-prairie" on a rocky bluff or hill. The predominating short grasses of a dry site provide a very different kind of experience than that provided by the taller grasses of moister sites. Each possesses its own kind of beauty.

> The occupied landscape may be richer by far in all the subtle amenities of the original land if only the designs we apply...are becoming to the form as well as the complexion of the meadows, woods and slopes we presume to compliment...Landscape character should be intensified, not obliterated; and the ultimate harmony should emerge as a blend in which the native quality of the region and the spot still prevails after the inevitable mutilation of the construction undertaken to produce needed roads, buildings and other works of civility and comfort. These humanized landscapes are to us the most inviting and beloved, and we are pleased and inspired insofar as the whole structure and sentiment of the landscape can be preserved...
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> There can be no deviation from the rule that the newly prepared landscape must be...a distillate or sublimation of the original myriad forms if it is to be a work of art in the sense of a high art form, timeless and historical.
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> Stanley White, as quoted in "Landscape Architecture" by John Ormsbee Simons

What specific or unique landscape character or form can we expect to find or intensity in the prairie landscape?

LANDSCAPE DESIGN UNITS OR COMPONENTS OF THE PRAIRIE LANDSCAPE

Just as the prairie landscape consists of topography, water bodies, plants and other components interwoven into a harmonious whole, each landscape designed for human use is made up of various functional and topographic units. Although roads, buildings and other structures may be strongly emphasized in man-made landscapes, plant materials may be counted upon to provide strong landscape character. Scattered shade trees and lawns of mown grass are two plant-material components commonly used in landscape design. This popular, "parklike" landscape may be compared with a natural savanna, or grassland with trees.

The prairie might be adapted for use as an open meadow in a landscape design, much in the same way that lakes, ponds, and mown lawns have been used traditionally. With scattered trees it could express a savanna.

Plantings of taller prairie species could be used to express lowlands, while shorter ones could express uplands or a drier landscape. Instead of simply saying and being "grass", each could express its own unique attributes.

Just as a "woods" or grove of trees offers an intimate enclosure or shady retreat in the man-designed landscape, a broad expanse of "prairie" or a prairie opening can provide a pool of sunlight or a soothing panorama of waving grasses.

Forbs with showy flowers or fruit could be used to high-light seasonal changes through spring, summer, and fall. Certain individual species may be used as symbols to express a certain theme or place, such as the floral emblems of states and provinces.

The foliage and seed-heads of ripening grass are equally significant. An October walk through big bluestem and Indian grass up to ones ears is a memorable experience, and man's finest jewels cannot match a field of little bluestem sparkling in the autumn sun.

How can these exciting and inspiring aspects of the prairie and its plants be utilized in the design of landscapes for human use?

THE USE OF PRAIRIE PLANTS IN LANDSCAPE DESIGN

Until a few years ago, the use of prairie plants in landscape design was essentially limited to the incorporation of individual species as ornamentals in traditional garden components. Coneflowers, butterflyweed and other showy forbs were planted in perennial borders; rock cress and shooting stars were planted in rock gardens; wild roses and sumac were used in foundation plantings or shrub borders.

There were a few exceptions, the most outstanding of which was the "prairie landscape school" of Jens Jensen. Jensen's work, most of which was done in Illinois and Wisconsin, incorporated native plant materials almost exclusively and expressed much of the character of the natural landscape. His work is well documented and provides much inspiration for today's landscape architects here in the midwest.

More recently, the concern for preservation and restoration of prairie areas has stimulated the study and use of prairie plants by landscape designers. Also, there has been an increasing interest in the recreational and educational potential provided by prairie landscapes, both natural and restored. Together, these interests and activities have broadened and deepened public interest in nature; especially here in the midwest, this interest includes the prairie.

Sheyenne Grasslands in North Dakota, Konza Prairie in Kansas, and Sheeder Prairie in Iowa, are examples of natural prairies or grasslands preserved for human use. These were not designed or developed by man, although they may have been used for grazing or other agricultural purposes. They serve as examples we can study, enjoy, and appreciate.

The University of Wisconsin arboretum in Madison manages two restored prairies for public use; they have been planned and developed and are maintained for educational, recreational and esthetic purposes.

The Parkside Campus of the University of Wisconsin at Kenosha includes prairie as an integral part of its master plan. The Landscape Architect, Neil Porterfield of Helmuth, Obata and Kassalbaum, St. Louis, explains in the Master Landscape Plan for the 690 acre campus:

> The Parkside Campus Master Landscape Plan presents a unique solution for large scale landscapes by using ecological principles as a basis for design...the plan has been formulated through a great amount of original

> research in the application of ecological planning for man-made landscapes...Ecological factors influencing the selection of plant communities and species, their location, and ratio of species are the basis of design decisions in developing a plan for (this) campus ...the essential elements of the landscape, both natural and man-made, become determinants for the subsequent plan. These determinants provide a program which frees the designer from arbitrary selection of plant species, ratio of species and configuration. This eliminates the use of cultivated ornamental plants and introduced perennial and annual grasses...
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> The composition of a natural landscape varies in accordance with continuous changes in environmental conditions of the site. The result is an esthetically pleasing, diversified landscape...
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> Another important factor in using a natural landscape is its educational potential...The natural landscape of Parkside Campus will provide an excellent outdoor laboratory for the natural sciences.

Using J. T. Curtis' book "The Vegetation of Wisconsin" as a guide, the campus was divided into vegetational zones including Boreal Forest, Northern Forest, Southern Forest and Prairie. Each of these zones was sub-divided according to physiography and soils.

As the campus exists today, much of the prairie area has been seeded to prairie species; in close proximity of the buildings a mown bluegrass lawn is used. The mow-line has been developed as a gentle, though distinct, transition from the intensely used interior toward the open landscape. Some conflicts in the details of the proposed design and the aspects of maintenance are being resolved, and increasing the amount of prairie to replace some of the existing mown lawn is anticipated.

Of particular interest at Parkside Campus is the manner in which the buildings have been designed to afford the occupants full view of the expanses of prairie and woods surrounding and penetrating the buildings themselves. This arrangement makes the use of native prairie plants much more satisfying, esthetically, than conventional mown grass would be.

We have recently visited three privately owned commercial and industrial developments in which prairie plants are used. In two of these, the prairie elements are integral parts of the landscape design for each building complex, while in the third restored prairie is being developed for conservation, recreation and education.

The landscape plan for the Cuna Mutual Insurance Company site in Madison, Wisconsin, was prepared by Darrel Morrison, Landscape Architect. In this plan prairie grasses are used as a distinct design unit, integrated with units of mown grass and plantings of trees and shrubs. Forbs are being added to the original seeding of grass species; many trees and shrubs commonly associated with prairie, such as sumac, crabapple, plum and dogwood are included. Part of the prairie planting is over a parking garage and is growing in a special light-weight soil mixture. Because the prairie area was relatively small at Cuna Mutual, it was sown by hand; and, because of its close proximity to the building and shrubs, it will be maintained by hand rather than with use of fire.

The landscape plan for the Salsbury Laboratory site at Charles City, Iowa was done by Franz Lipp and Associates, Landscape Architects of Chicago. In this plan, prairie plants are used in extensive stands between the road and the main building, but separated from the building complex by a roadway and broad expanse of mown grass with scattered trees. Lower parts of the "prairie" were seeded with a selection of grasses taller than those used for the rest of the

area. No forbs have yet been included, but some grasses and forbs common to the area are present and greatly enhance the overall appearance of the planting. A ten foot wide strip is mown along both sides of the entrance road to help relate this expanse to that of the mown grass surrounding the building. The prairie planting was burned this spring, the roadway and mown areas serving as safety features.

The owners of Sather Cookie Company of Round Lake, Minnesota, are developing much of their land adjacent to Round Lake to serve more effectively as a scenic, educational, and recreational resource of the community. Trees and shrubs are being planted where row crops have been for many decades, and prairie is being restored on similar portions. Although only grasses were sown on the site three years ago, there are already a considerable number of milkweeds, coneflowers, anemones and other prairie forbs among the indian grass, switch grass, bluestems and other grasses.

Walden Park, in Madison, has been designed, installed and maintained by Professor Darrel Morrison and students in landscape architecture at the University of Wisconsin. In this small park, prairie plants occupy most of the central space, while trees, shrubs and herbs of other Wisconsin vegetation zones serve as enclosing and screening units. During a recent visit, we were pleasantly surprised by the effective enclosure and screening that was provided by the tall grasses and forbs! Subtle manipulation of ground form and proximity of buildings on two sides add to the spatial quality, and also increase the diversity of microclimates. Thus, the great variety of plant species in so small a space becomes ecologically as well as esthetically meaningful. The result is an enrichment of human experience.

PRESERVATION AND MANAGEMENT; PRAIRIE OF THE FUTURE

The preservation, establishment, and management of natural and man-designed prairies are challenging aspects that must be considered in their design or use. These studies and practices are continuous, and becoming more widespread. The use of fire is usually considered, and sometimes tends to discourage owners or administrators. We are encouraged by the progress being made, both in the practice and in public acceptance.

How did we learn to manage rice paddies, corn fields, and apple orchards? I am convinced that when we decide that we want to live and play and work amid prairie landscapes, we will create them and learn to manage them.

> One characteristic of animal behavior is that it is dominated by the physical presence of what the animal wants or fears...Man has freed himself from this dominance in two steps. First, he can remember what is out of sight...speech allows him to recall what is absent, and to put it beside what is present; and second, the practice of speech allows man to become familiar with the absent situation, to handle and explore it, and so at last to become agile in it and control it.
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> J. Bronowski as quoted in "Landscape Architecture" by John Ormsbee Simonds

We cannot expect to physically experience prairie as it once was here in the Midwest, but, hopefully, through continued growth in our knowledge and understanding we may know and appreciate the essence or spirit of this great natural phenomenon.

The true idea of the prairie will live forever, but the prairie experiences of future generations will depend upon the interpretation and expression of the designers and custodians of our landscape.

ABSTRACT

Although the inherent beauty of the natural prairie landscape has been recognized and appreciated by some for many years, only recently has more than a token amount of attention been given toward utilizing its form or its plants in the design of landscapes for human use. Today, we can find many examples where prairie plants are being used to solve economic and ecological landscape design problems as well as to provide unique educational and esthetic experiences.

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