

INTRODUCING LANDSCAPE ARCHITECTURE ISSUES, RESEARCH AND EDUCATION AT NORTH DAKOTA STATE UNIVERSITY

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In the winter of 1984, North Dakota State University offered the first North Dakota course in landscape architecture. During the spring of 1988, North Dakota State University will be graduating the first class of landscape architecture seniors. These students will begin serving the state, Great Plains and markets throughout the country, performing landscape architectural services.

Landscape architecture is practiced very similarly to the professions of planning, interior design, architecture and engineering. Landscape architects often work closely with professionals from these related fields and professionals in soils, plant ecology, wildlife management, geology, hydrology, climatology and human behavior.

The American Society of Landscape Architects defines the profession as follows:

"The art of design, planning, or management of the land. Arrangements of natural and man-made elements thereon through application of cultural and scientific knowledge, with concern for resource conservation and stewardship, to the end that the resultant environment serves a useful and enjoyable purpose."

The "father" of American landscape architecture is considered to be Frederick L. Olmsted, who designed Central Park in New York City over 100 years ago. Olmsted's creation has survived, grown, and enriched the lives of millions of people because he planned it that way.

The fundamental goal of today's landscape architect is the same as that of Olmsted — to make the world more livable and life more satisfying and meaningful.

Landscape architects are designers and planners whose concern is the development of land for human use and enjoyment. They articulate the physical arrangement of buildings, design transportation corridors, develop open space systems, plan cities, design recreation systems, perform environmental impact

statements and develop plans for the wise use of natural resources. They utilize plants, water, wildlife, earthforms, lighting, pavement, walls, and other materials in their work.

Quite often landscape architecture is confused with or associated too closely with the nursery industry or the science of horticulture. While there is an important tie in the area of planting plans and certain landscape elements, many aspects of landscape architecture, such as land use analysis, site planning, recreation planning, urban design, etc., have little to do with plants, horticulture or the nursery business.

Landscape architects perform these professional services by analysis of planning, design and land use problems through sketches, plans, reports and specifications. Project scale and project scope vary from broad continental landscape analysis and planning to detailed design of civic plazas or small residential gardens.

Specifically to serve the state of North Dakota, landscape architects will be trained to perform a variety of tasks. The staff at North Dakota State University will pursue land-related research issues pertinent to North Dakota.

Rural Area Development

Population growth projections indicate that by 1990, urban expansion will consume numerous additional acres in North Dakota. The consequences of this "urban sprawl" into the rural countryside are significant, but the actual conversion of farmland to urban land is only part of the problem. On the urban fringe, where the greatest land use tension exists, competition for land greatly dilutes the agricultural economy.

Urban expansion into rural areas is typically inevitable. Landscape architects are professionals determining how this development will occur with minimum impact upon agricultural lands. The profession is also involved in preserving rural environments, community revitalization, growth strategy planning, county planning, recreation design, and agricultural land reclamation. Landscape architects can be found working on these problems in jobs ranging from private industry to all levels of government.

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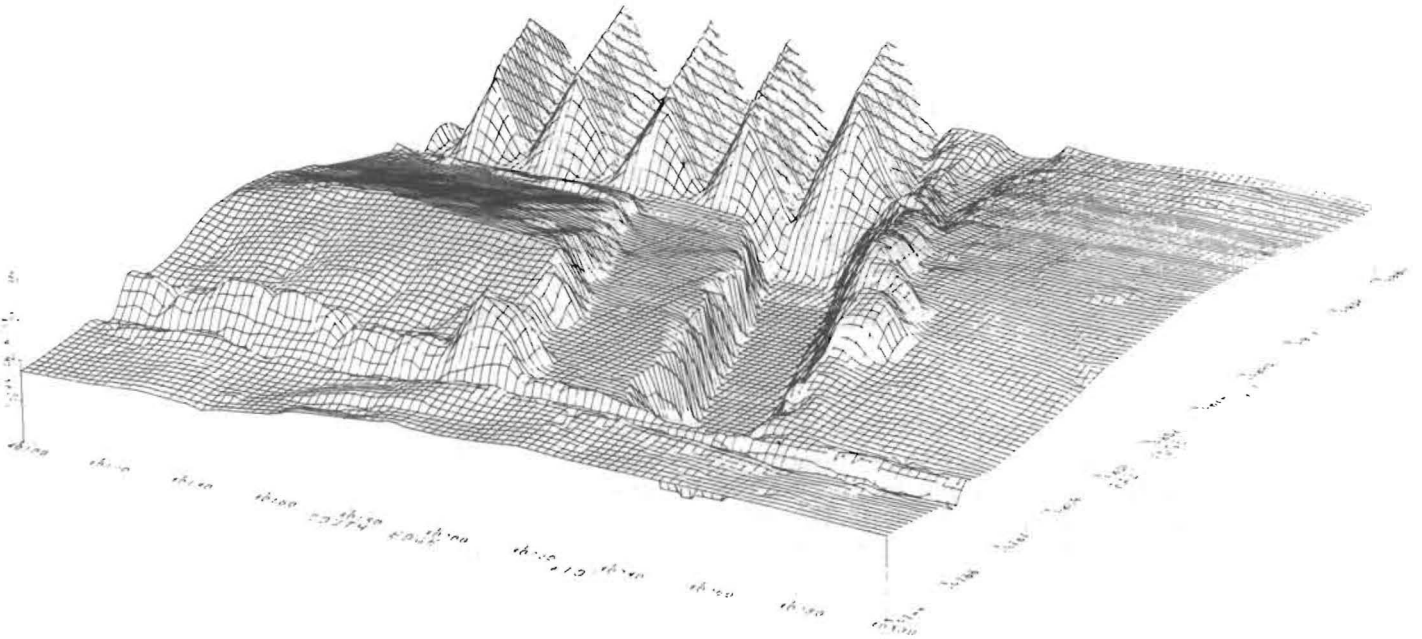


Figure 1. This figure is a computer assisted drawing used by landscape architects to study the best economical method to extract coal and to study the most efficient method to restore agricultural productivity.

Energy Conservation

Energy consumption and conservation have become significant issues of our time. How people manage and use resources will affect the quality of life — indeed the ability to sustain life. In a climate such as North Dakota's, with extreme temperatures, it is imperative that one develops an understanding of new building technologies as well as good site planning techniques for year-round energy conservation on a community-wide scale and in the individual home.

The landscape architecture profession has responded to energy efficiency problems and is today an integral partner in resolving the energy crisis. It should be noted that many of the precepts the profession is advancing are not new. They are refinements of tried and true concepts. As designers of exterior space, landscape architects have long been aware of the need to protect against winter winds while allowing the maximum penetration of summer breezes. They have used trees for shade. They have captured "sun pockets" to aid in heating interior and exterior spaces. Now the profession is becoming involved with a variety of new energy-based concerns:

- Site planning for solar access, including recommendations for plant selection.
- Developing new design criteria for community plans based on "solar restriction" rather than traditional zoning.
- Restudying design requirements for energy-intensive construction such as roads and walks, to minimize construction and maintenance costs while maximizing their efficiency.

- Developing earth-sheltered construction concepts, including the use of plants and their root systems as insulators and as erosion control elements.
- Developing plans and computer assisted programs for efficient extraction of energy related resources.

Recreation Design and Management

A less mobile society will place increased demands upon public recreation facilities. Traditional community and neighborhood parks will struggle with the problem of over-used natural systems.

The landscape architect is uniquely trained to find solutions to the over-use of our natural environment. The study of the land, its soils, plants, and ecology, coupled with the knowledge of how to develop creative ideas, prepares the landscape architect to meet the challenges of the future. Revitalizing existing recreational systems and adding new recreational facilities throughout the state's urban and rural areas continues to be one of the major employment areas for landscape architects.

Design for an Aging Population

"Elderly Activists Toil for Future" was a recent headline in a metropolitan newspaper. This statement would be easy to pass over except for the fact that our entire nation is getting older. The best estimates are that there are 34 million senior citizens in the country. It is expected that this number will double by the end of the century. Briefly, America will no longer be a teen/pre-

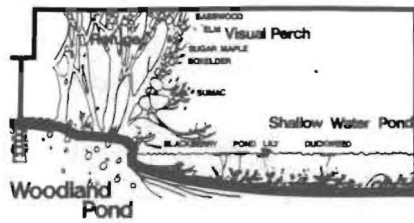
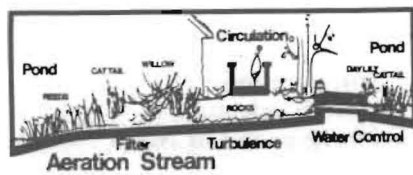
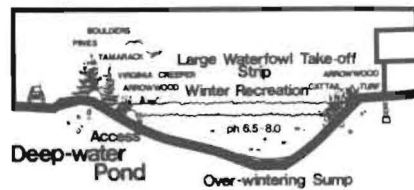
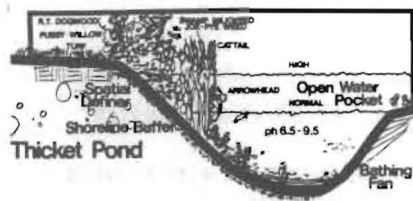
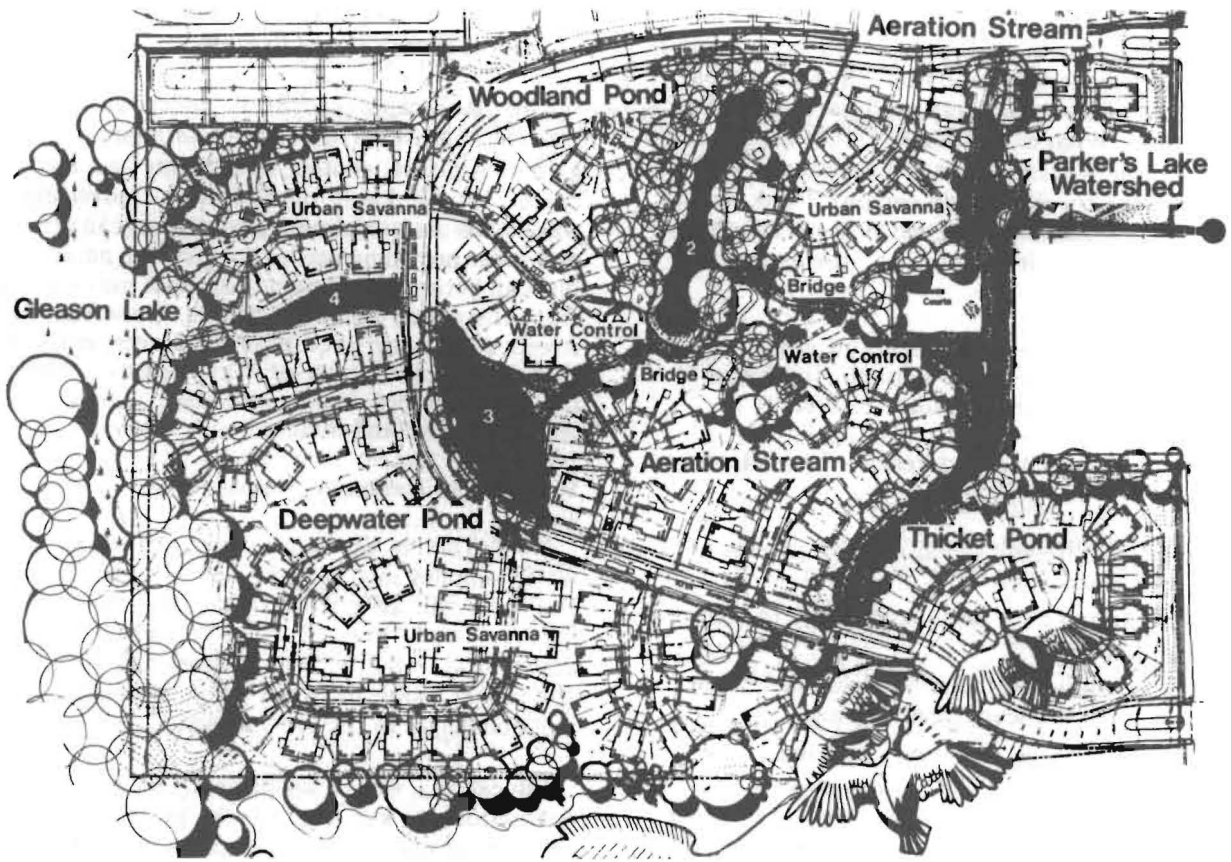


Figure 2. This illustration depicts an award winning housing project designed by a landscape architect which reclaimed an old gravel pit for housing, developed ponds for improving water quality and planting to attract suburban wildlife. This high density community prevented nearby prime agricultural land from being consumed.

teen society with its special needs, nor a society of heavy productivity, but a society oriented toward the retired, older person.

Compare this fact with what we see around us today: lighted Little League baseball/football and softball fields in almost every community, and parks geared to active recreation. What of the quality of life for the active retired person — not to mention the nursing home and other housing for the elderly person? Think about your community with 37-50 percent of the residents as retired, older people. Is it equipped to provide for their quality of life?

Just as department stores have begun adjusting to population shifts, so must every community begin to evaluate the needs for the immediate future.

The landscape architect addresses the following issues:

- the quality of life and the integrative process of creating communities;
- the application of the latest technology to community development;
- the understanding of the relationship of human perceptions to the sense of well-being;
- the development of community priorities.

Great Plains Urban and Small Town Design

The next 50 years will see major changes in our urban and small town environments. Rebuilding to accommodate new uses and new energy requirements will reshape the use of the landscape. Although often overlooked, it is the quality of the open space, not the buildings, which gives a town its unique expression. Open space is the key to liveability; yet, this element is often left to chance or is poorly organized. Much undeveloped existing urban land is presently parking lots, exceptionally wide streets, vacant lots, scrub brush

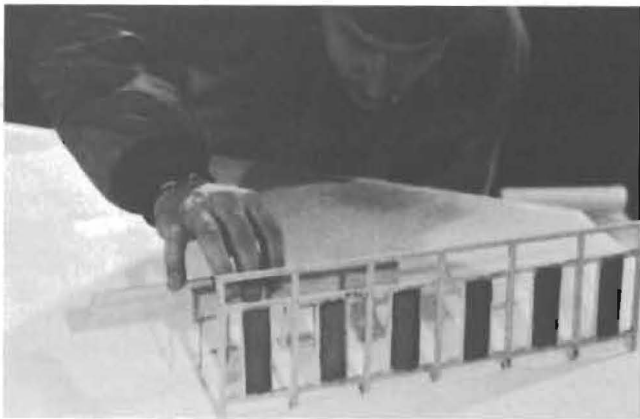


Figure 3. The photograph illustrates an NDSU landscape architecture student working in the wind tunnel laboratory evaluating various designs to mitigate the effects of snow drifts and wind chill.

area along streams and highways and other under-used spaces. Recycling these bits and pieces of the urban landscape may well be the critical factor in maintaining the high qualities that make many North Dakotan cities and towns beautiful and liveable.

The landscape architect understands the city resident's needs for developing an appropriate image, gathering places, contact with nature and recreational spaces for all kinds of activities. Converting linear wastelands along highways and streams can create trails and walks providing needed contact with nature. Vacant lots can become playgrounds or quiet parks for respite from the urban noise and bustle. Unnecessarily wide streets can be narrowed to provide trees, grass and sitting and gathering spaces. Many creative design ideas can be developed by the landscape architect to keep cities attractive and human.

Water/Land Resources Management

North Dakota will receive demands for the use of its water supplies internally as well as from other states. Problems will arise from the conflicting demands for surface and ground water among industrial, agricultural, wildlife, and recreational users. Erosion and runoff problems, water quality and water loss, present challenges to the users of water.

Education, wise management, balanced use, and restoration are key methods the profession recognizes and uses to maintain and enhance the quality of North Dakota's lakes, rivers, wetlands, and reservoirs. Landscape architects plan agricultural and urban development to avoid aquifer pollution, minimize runoff, increase rainfall absorption on developed lands, and use runoff water as a visual and cultural amenity.

Future Landscape Architecture Research

Landscape architecture is a profession broad and diverse. Yet, each professional shares a deep concern for the land and for people. It is this concern that bonds the profession. It results in the diversity of projects that improve the quality of outdoor environments in North Dakota.

Landscape architecture research personnel at NDSU will work closely with scientists in a wide range of disciplines to assist the people of North Dakota. In the future, public agencies and private businesses will employ landscape architects. They will benefit from the landscape architect's perspective and expertise. Together with other professionals, such as architects, engineers, sociologists, and biologists, the landscape architect contributes innovative solutions. These contributions are based upon the landscape architects understanding of both human and natural systems.

In a joint cooperation with the College of Engineering and Architecture, the College of Agriculture is pleased to provide its citizens a responsible, creative and effective design profession to North Dakota.