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Developing a Sustainable Enviroscape

I. Introduction Of Our Landscape Traditions

A. Many of our current landscape designs are based upon public opinion specific to the style of architecture in the neighborhood

B. Most designs are manicured and expensive to maintain for curb appeal—biggest bang for the "buck"

C. Most original planting designs were not intended for sustainable reasons but designed to increase value of property and to be "up to standards" in the neighborhood

D. It was common practice to use pesticides and over use multi-nutrients and multi services. Replacement of plantings became a recurring practice and a cost of living in this society of "keeping up with the Joneses"

II. ENVIROSCAPE strategy is to establish a base-line of natural characteristics and elements in order to prevent environmental impacts and promote life-cycle energies. The property survey is composed of the following elements:

A. Landform topography and its characteristics

B. Geology, soils, parent & topsoil testing

C. Major tree leaf testing of nutrient content & vitality

D. Identify water courses, drainage

E. Identify and evaluate present usage of property (passive or recreational)

III. The Enviroscape Testing and Analysis Strategy will give you documentation necessary to write a prescription for a new (5) year property maintenance and master planning

A. Prevent environmental problems

B. Reduce maintenance costs

C. Develop a long term naturalization of property ecology

D. Identifies a new and more effective approach

IV. Livable Landscape Design is focused to accommodate your particular lifestyle while simultaneously be environmentally responsible, functional and aesthetically pleasing while minimizing costs and using effective practices.

Based on the sun, water and soil sensitivity, plant selection plays a vital role in sustainability. Part of enviroscape would be transplanting existing plant material to a more self sustaining location. A rethinking of beds, lawns and feature area locations will reduce the need for water and additional services such as reducing large, passive lawn areas into woodland meadows etc. Some of the horticultural factors that need to be determined are as follows:

1. Soil Horizon Profile & Evaluation of Site Specific properties

    a. Organic Layer--appx 6-12" deep—need Composition and PH

    b. Mineral Layer is appx between 12-18"

    c. Parent Soil Layer: geological soil depth and composition specific to your area

    d. Depending on the depths of each layer, you will need a bulk density and cation exchange test

2. Healthy soil composition is 5% organic, 45% mineral content, 50% oxygen and water. The top 6-12" are where all absorption roots are for plantings. The healthy soil depth for planting is appx 18" with combined sun, water and drainage function

V. Soil Testing: When you receive your tests for soil porosity, pour space, water holding capacity, dry-out ability, micro-nutrients, PH level and cation exchange capacity, the levels will determine the positive ions, soil attraction to retention and adhesion. Minerals and soil nutrients, mycorrihizae and nematodes will be sufficient in most cases to replace the need for the majority of inorganic fertilizers in the trees and plants.

A. Some examples of restrictive/abusive relationships are as follows:

1. PH is the acidity-neutral-alkalinity and is logarithmic. i.e. 7.0 is neutral, 6.0 is 10 times more acidic than 7.0 and 5.0 is 100 times more acidic than 6.0

2. If the PH is 5.5 or below, phosphorus may be deficient and other nutrients could be toxic to the plant. Just by increasing the PH level, nutrients such as calcium, magnesium and potassium may become available without fertilizer. There are plenty of macro nutrients naturally in the soil composition of this area. We as a prolific society over-fertilize suggesting more is better.

VI. Watering vs Sprinkler System

A. Lawns depending upon regulated soil, compaction, watering, and type of grass require additional nutrients due to their exposure of the elements, especially with manicured lawns and maintenance using high fertilization programs

B. Soil and plant species size, season of planting, temperature levels, and humidity regulate the quality of water

1. The soil conditioning actually develops the available water and water holding capacity

2. Frequent shallow watering encourages surface rooting making the shrubs and trees vulnerable and dependant on more water and fertilizer

3. Late at night or early morning is preferable watering time

4. Periodically monitor plant health and recognize bad practices (i.e.) watering the root collar causes decay & too frequent poor percolation causes salt build up from water

5. If watering is designed in sustainable landscapes it should be minimized and only supplemented during drought periods and selective to particular areas only. Planting plants with similar water requirements helps

VII. Native Species Versus Introduced Non-Native

A. Be selective to the location, light and drainage

B. Selective Non-Native species that have been introduced successfully have been naturalized and proven to thrive in this region

1. Tree and shrub selection at the nursery. When planting look at the leader buds, root system and foliage

2. The actual planting hole must be large enough and at proper depth so that the plant is not submerged by excess water at root ball level. Suggest in this area ¼ of the ball should be above ground meeting the root ball with graded soil and tree-well made of soil

3. The watering and plant care has a definite establishment period

VIII. Fertilizer-- Organic vs. Inorganic

A. Plants do not recognize the difference….they both have to break down into water soluble forms of multi-nutrients before roots have fiber absorption from the soil

B. A misconception is to call fertilizer "chemical and non chemical" due to the fact that many of the natural chemicals are actually synthetic organic compounds in an organic fertilizer.

C. Major Differences between Organic and Inorganic Fertilizer:

ORGANIC:

1. Releases more slowly and naturally on roots and soil biotic activity, nematodes etc. Carbon based.
2. Develops additional active elements which generate ability of soil and plant to have a symbiotic relationship with fungus
3. Promotes natural intake of plant to generate minerals, macro/micro nutrients and uptake
4. Less chance of over fertilization

INORGANIC

1. Releases quickly with water, cheaper, tendency to burn or over-fertilize causing leaching into water courses
2. Less relative to temperature
3. Easier to establish actual elements in bag with professional use
4. More likely to create a dependency for treatment and over treatment causing lush, insect biotic problems and disorders

D. The Fertilizer Goals---Best Management Practices

1. Only supply nutrients if needed, based on individual deficiency
   a. Overcome visual such as chlorosis disorder
   b. Replacement of minerals and nutrient if needed
   c. Increase growth, flowering, fruit production
   d. Increase vitality of plant, tree, turf and foliage flower fruit

E. In my opinion there should be only one (1) application for each property. In the best interest of your trees, plants and turf, applicator should be allowed to use organic or inorganic depending upon the actual needs and areas of your property. This will also be most effective as insurance and will minimize cost expenditures.

F. There are many methods of application of fertilizer:

1. Soil/granular spreader/broadcaster
2. Soil injection of liquid, leaf spray, radial holes
3. Cambium injection

G. Less is more in preventing ongoing cost and health consequences

IX. Inland Water Courses, Ponds, Lakes and Drainage Problems that Exist on your Property

A. The actual water courses should not be basins for your leaf disposal

1. They create unnecessary problems caused by their decay, reducing oxygen, increasing phosphorous and in turn creates overloads of algae and aquatic weeds

B. The ownership of your property connects you to the overall watershed of your community and well being of the fresh water supply. Frequently monitor and inspect the water quality

C. Many of your drainage problems can be resolved by rethinking improvements that will in turn protect your surfaces, large trees and property values

D. The water courses need maintenance for erosion, habitat improvements and prevention/control of Storm Water Occurrences. Improvements control storm water

E. Wetlands and native areas should be a part of your landscape settings, interest and health. They should be improved to be an enjoyable, passive area. Many wetland plants are now available to grow in wetland soils

F. There are many ways that contamination, non point pollution from upstream or gradient areas could be collecting in your wetland or pond eventually becoming your responsibility. You should identify the effects of the prevailing conditions

X. The Majority of Suburban Landscapes Require (Bio Network Controls)—The DEC created an IPM (Integrated Pest Management) to reduce the amount of persistent chemicals being used on our land which will accumulate and cause human life disorders. The degree of usage can be regulated but it is not measured or tested where it is used so you do not know if it is accumulating or not.

A. The Categories—Dangerous and Rational Pesticides

1. Heavy chemical toxicity—poisons, acute, oral, dermal (touching or rubbing forearms, head or forehead)

2. IPM tries to make applications compatible to the environment. i.e. Forms of pheromones, attractants, repellants etc. The pest is identified by host/season suggested timing of application. On the labels the quantity of use and effects of usage are identified.

a. Biological and cultural approach –hormonal and microbial measures

b. Predators approach, bugs, fungus etc…natural treatments

c. Safety and amount of active ingredient needs to be controlled

***Back To The Future. Your Inter-Generational, Sustainable Landscape

A. Program, planning, phasing, monitoring checks and control---awareness of status

B. The aesthetic adjustments and appointments will have the ability to deal effectively with stress

C. Your children, family, community and watershed will be safer with you as a steward of nature

***Participate in Education & Safety—You Are An Integral Part Of Our Sustainable Enviroscape

A. Families, children & parents including all staff workers on premises

B. Safety compliance—ISA/Tree care professional standards

C. IPM/DEC 3A applicator

D. Any work on premises of any magnitude, call (DIG) for safety

E. OSHA/Safety requirements

F. Be aware of permitting and regulation requirements by all town governing committees, government agencies

G. Depending on scope of work, you may need professional engineers, attorneys and architects certifications

IN CONCLUSION

There are going to be a lot of additional challenges to face in the new millennium. Many of our last millennium solutions using technological advances will not be cost effective or be a long term resolution. Community government is already charging us for water supplies, and according to the Environmental Protection Agency, our fresh water demand has tripled. The EPA predicts that a fresh-water shortage in certain states will become a major issue by the year 2013.

Sustainable practices are viable, cost-effective, long term and responsible solutions.

Please show your respect to the bountiful environment that Mother Nature has let us live on, and take a sustainable responsibility for the part of land that is under your care.