Building "Smart": Environmentally Sensitive Design

Information and Tools for Citizen Planners

Introduction

Maine's natural environment is a proud part of our heritage. It will also be a proud part of our legacy, if we pay attention. Growth pressures are increasingly competing with Maine's natural environment – one of the qualities that make Maine the special place we call home. And while most of us recognize that growth in our communities is inevitable and often desirable, it is up to us to determine whether growth has an overall positive or negative effect on our communities and the environment. By encouraging environmentally sensitive design we can accommodate growth in our communities and also ensure that Maine's natural environment continues to be an asset for us and future generations. Establishing guidelines for where and how to build with environmentally sensitive design enhances and protects surrounding natural environment and wildlife habitat, and contributes to the quality of life in our communities.

Principles of Good Site Design

Environmentally sensitive design is a tool to help communities achieve a balance between growth and community needs, desires and quality of life. Although every community and development site is different, there are some basic principles of environmentally sensitive design that apply in most situations. These basic principles are:

- limit land disturbance (tree clearing, land grading),
- avoid steep slopes and wetlands,
- protect important natural areas and habitats,
- limit impervious surfaces, and
- provide innovative and effective storm water management.

Environmentally Sensitive Design Techniques

Good site design techniques accomplish these principles whether the project is a subdivision, an office building, a shopping center, a community park, or some other type of development.

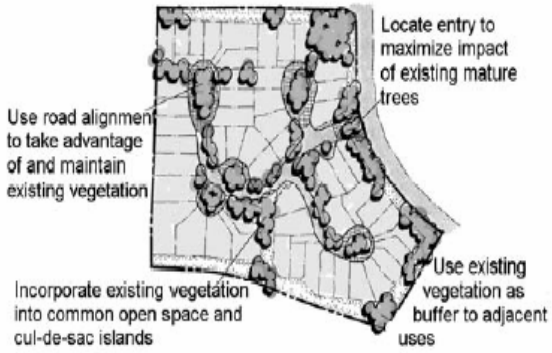
Clustering

Perhaps the primary thing to consider when beginning any development project is how to limit the amount of land that is disturbed. Clustering groups building lots to create a more compact development pattern, thus **reducing the amount of clearing and grading that is required**. Clustering can also allow for variations in lot size, shape, and orientation, further helping to reduce land disturbance and **protect sensitive areas such as steep slopes, wetlands, wildlife habitat and other important natural areas**. To protect sensitive areas on a development site, they must first be identified. Site visits and existing local, state and USGS maps can help with identification. In rural areas, clustering has been used to preserve large areas, such as hardwood forests, wetlands and working farms. Clustering also provides common open space and can often achieve a more cost-effective building project. Clustering also **cuts down on impervious surfaces** by reducing the amount of roadway typical of a conventional subdivision design.

As illustration, if conventional zoning allows one unit per acre, a 50-acre site would have to be divided into 50 one-acre lots. With cluster zoning, homes could be built on half-acre lots, leaving 25 acres of land as open space. In Maine, various towns have adopted clustering provisions in their ordinances, including Saco, Buxton, Falmouth, Bar Harbor and Canton.

Creative Landscaping

Creative landscaping works with the natural vegetation when developing a site. It **reduces land disturbance** when creating yards. Opting for a smaller lawn and incorporating more of the existing vegetation can result in a more interesting, diverse and environmentally sensitive development. It can also be applied at a larger scale for subdivisions, incorporating existing vegetation into the larger site design.



Source: Center for Watershed Protection

Existing site vegetation can also be used creatively as landscape buffers, which can help **protect sensitive areas**.

Creative landscaping can also help handle **stormwater management** in a more innovative and ecologically sensitive way by using the natural systems in place on a site to integrate water runoff.

Modifying Road and Parking Design

Limiting the amount of impervious surfaces (roads, parking lots) is an important environmentally sensitive design principle. Impervious surfaces increase water runoff, limit the amount of groundwater recharge, and reduce the amount of habitat on a development site.

Modifying road requirements can **reduce impervious surfaces**. Road width, length, turning radius, and shoulders can often be modified without compromising safety, and minimize the area covered in pavement on a development site. In addition, by relaxing front and side yard setback requirements you can reduce road frontages and driveway lengths and impermeable surfaces on the site overall.

Modifying parking requirements and choosing permeable pavement materials can go a long way towards **reducing the amount and degree of impervious surfaces**. Parking requirements should reflect actual usage to the greatest extent possible, and should consider opportunities for shared parking when possible.

Does Your Town Allow Environmentally Sensitive Design?

When a community takes the time to identify and articulate the goal of environmentally sensitive design, developers respond. Often times, environmentally sensitive design techniques reduce site preparation costs, and result in savings to developers. Inflexible zoning and outdated road design standards tend to inhibit environmentally sensitive design. Communities often have a mix of subdivision codes, zoning regulations, parking and street standards, and drainage regulations that work at cross-purposes with good site design. Such regulations can discourage good design through unnecessarily complex and lengthy review and approval procedures. Consequently, few developers are willing to take risks with creative site plans that may take years to approve or that may never be approved at all. **Take the time to articulate the environmentally sensitive principles your community values, and then review your regulations to identify any areas that need to be modified. Encourage creativity and make sure regulations are consistent and not in conflict.**

State Support for Environmentally Sensitive Design

Support for environmentally sensitive design also comes from Maine law. One example is the Natural Resources Protection Act that addresses certain land improvement activities that affect natural resources protected under the act. For more information go to www.maine.gov/dep/blwq/docstand/nrpapage.htm.

Examples in Maine

As awareness of environmentally sensitive design grows, developers are responding. Ledgewood Court apartments, in Damariscotta, received the 2005 Friends of Midcoast Maine Award, not only for its affordable units, but for its minimal intrusion on the natural environment. All 24 units were built on a 3.5 acre corner of a 10.5 acres parcel, preserving the remainder as open space. All storm water is handled on-site without impacting local water bodies.

Ledgewood Court; Damariscotta, Maine

In summary, one of the common objectives of the smart growth movement is the preservation of natural resources, open space and sensitive environmental areas. One way to realize this objective is through environmentally sensitive design.

Additional Resources

Center for Watershed Protection
www.cwp.org/better_site_design.htm.
Beginning with Habitat
http://www.beginningwithhabitat.org
Rural by Design Randall Arendt