



## The Mission – Delivering Sustainable Communities

### The Challenge

The current market place lacks adequate sustainable land developments. Yet, the building community – planners, developers, architects, engineers, landscape architects, and contractors - have the skills to create development packages that can change the face of America's communities.

Is it a "Mission Impossible" to provide sustainable land use choices that "meet the needs of the present without compromising the ability of future generations to meet their own needs?"<sup>i</sup> Traditional market practice is often driven by "old is out and new is in." What about a market practice where the product may be either old or new, but factors such as functionality, resource conservation and reduction of hazardous impacts are important? What about a market place where the product's increased life span and reduced impact on health are the primary goals?

Sustainability requires a market-oriented response to provide cost efficient neighborhoods that are socially and environmentally responsible. It is not impossible to create sustainable communities, but it requires multidisciplinary vision and commitment. Sustainable building products and techniques are not widely available in the development market place, even though sustainable products and communities have proven to provide profitable returns.

### Recognizing the Growing Demand

Currently, at least 26% of American people are spending their dollars to support a lifestyle of health and sustainability. People in this segment of the marketplace are classified as the "cultural creatives" by Dr. Paul Ray, sociologist.<sup>ii</sup> Cultural creatives have value-driven spending habits. Sustainable communities embody the values of the cultural creative sub market.

According to a recent survey conducted by National Association of Home Builders (NAHB) and the National Association of Realtors® (NAR), the largest portion of homebuyers surveyed, some 35%, said that they wanted environmentally friendly homes that did not cost more than average market rate homes<sup>iii</sup>.

More importantly, another 18% of those surveyed said not only that they want more environmentally sensitive homes, but that they are willing to pay more for environmentally friendly features. Eighteen to thirty-five

percent is a large portion of the home buying market to be left underserved.

### Sustainable Principles

Responding to homebuilders and homebuyers demands, a number of groups have defined sustainable values, beliefs, paradigms, and professional practices. One effort, the 1991 Ahwahnee Principles, spawned "New Urbanism." These principles embrace the concept that community planning should be in the form of "complete and integrated communities," which are walkable, transit connected, clearly defined, diverse, and natural resource sensitive. Ahwahnee's regional principles encourage mass transit and greenbelts. These principles also stress integrating design features and materials into land developments that reflect the local region's character.

### Environmental Resources

Demand for sustainable development packaging is burgeoning. A collection of useful online resource explain how to make business and life more responsive to this growing need.

The City of Austin's Sustainable Communities Initiative website ([www.ci.austin.tx.us/greenbuilder/](http://www.ci.austin.tx.us/greenbuilder/)) offers a host of sustainable educational sources. The Natural Step ([www.naturalstep.org](http://www.naturalstep.org)) is a nonprofit educational organization working to build an ecologically and economically sustainable society. The National Environmental Education & Training Foundation is focused on meeting critical national environmental challenges through environmental learning ([www.neetf.org](http://www.neetf.org)). The Education for Sustainable Development Tool Kit ([www.esdtoolkit.org](http://www.esdtoolkit.org)) is produced by staff at the Energy, Environment and Resources Center at the University of Tennessee at Knoxville. Albuquerque's Environmental Story ([www.cabq.gov/aes](http://www.cabq.gov/aes)) helps students relate solicitously to their local natural and human environment.

There are many individuals and groups that are transforming "sustainable principles" for development into practice. Judy and Michael Corbett created Village Homes in the 1970s and then later, with Robert Thayer, authored Designing Sustainable Communities: Learning from Village Homes. Founded in 1993, the Congress for New Urbanism has nurtured the traditional neighborhood development (TND) concept that supports more compact and integrated development. American Planning Association has supported the movement by recently releasing the Growing Smart Legislative Guidebook, which includes model statutes for land use planning. Urban Land Institute adopted the "Smart Growth" program initiated by the EPA. Since 1992, the American Society of Consulting Planners has recognized



excellence in sustainable development through its annual sustainable projects award program. California Local Government Commission and California Environmental Resources Evaluation System both produce important works and maintain extensive databases to guide professionals in making sustainable choices. And, the Project for Public Spaces has taken a leadership role in preparing materials for the public.

### **Green Building Products**

Making a major shift in a community's buying habits requires that sustainable products be available within the mainstream economy. Homebuilding product makers are rising to the challenge. For example, two of the leading paint manufacturers, Sherwin Williams and Benjamin Moore, now offer certain paint products with no and low volatile organic compounds (VOC's) that reduce human exposure to carcinogenic materials. Home Depot has adopted a "wood-wise" program, and is working closely with the Southface Institute in Atlanta to provide sustainable building materials. Interface Inc., the world's largest commercial carpet firm in the world, is a positive environmental practice model for other businesses aspiring to capture the environmentally friendly industrial product market. The Whole Building Design Guide ([www.wbdg.org](http://www.wbdg.org)) provides information on construction design techniques to improve building performance and quality, as well as information on federal mandates, and governmental and non-governmental standards.

Commonly used pesticides available in the consumer marketplace are dangerous. Nonetheless, some natural pest control companies, such as Naturezone based in Sarasota, Florida, are finding commercial success with alternative methods. Even the larger pest control companies are moving toward a more natural approach to pest control.

For the informed consumer, there are several choices of where to purchase a variety of green products. Most well known is the National Green Pages, published by Co-op America. Available on-line at ([www.greenpages.org](http://www.greenpages.org)), it lists Co-op America Business Network member firms and products. In the Green Pages customers will find merchants such as Earthsafe and Wellness Technologies of Asheville, North Carolina, a manufacturer and distributor of inexpensive consumer and commercial safe cleaning products ([www.earthwellness.com](http://www.earthwellness.com)). The Green Pages also showcase mail order businesses, such as Real Goods and Harmony, which specialize in delivering sustainable products.

### **Sustainable Site and Building Development**

Development professionals have sustainable solutions that are presently utilized in sustainable buildings, sites,

and communities. The sustainable community would be found in one of several forms: traditional neighborhood development, infill, a special purpose community, a condominium, a co-housing project, an apartment complex, or an old, new, or revitalized neighborhood. Examples of sustainable communities are described on the Department of Energy's website ([www.sustainable.doe.gov](http://www.sustainable.doe.gov)).

Across the U.S., cities and utility companies are seeking ways to develop more environmentally friendly buildings and reduce energy consumption through green building programs. Although there are only a handful of fully operating programs, many more cities are taking notice. Two of the most notable efforts to standardize sustainable development practices are the U.S. Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) program and the City of Austin, Texas' Sustainable Communities Initiative (SCI).

To encourage the market place to create opportunities for sustainability, the U.S. Green Building Council established the LEED Green Building rating system. The four-year development of the rating system began in 1995 "in response to the U.S. market's demand for a definition of green buildings." Currently, LEED certification applies to construction of commercial, institutional and high-rise residential. USGBC is working on a rating system for other residential development types.

The City of Austin's Sustainable Communities Initiative (SCI) "exists to help the greater Austin region achieve economic prosperity, social justice, and ecological health - the highest possible quality of life in the best possible environment" ([www.ci.austin.tx.us/sustainable/](http://www.ci.austin.tx.us/sustainable/)). Austin City government has a number of departments that complement the SCI. One of the most visible City operated endeavors is Austin Energy's Green Building program. This program has created a climate for green builders to assemble home development packages with special energy conserving and environmentally friendly features. By paying the upfront costs of "green" features, participating builders have an edge in the competitive market place that results in lower fuel bills and healthier indoor air quality for residents. The Green Building staff provides a full range of Green Building consulting services and 'how to workshops' to help construction professionals craft better buildings. In addition, the Green Building Program offers a host of helpful publications such as The Sustainable Building Sourcebook, Green Building Newsletter (available by email), Green Home Buyers Checklist, Municipal Building Guidelines, and BEST Case Studies."



### Examples of Construction Techniques

As is the case with each of the above noted sustainable initiatives, there are many techniques that can be incorporated into the construction of residential, commercial, industrial, and institutional developments. Applying the following sustainable techniques in building construction will generate cost efficient, aesthetic, and marketable buildings.

**Site Selection:** One of the first phases in sustainable land development is the selection of the appropriate site and location of the building on the site. Every site should be planned in harmony with nature. Topography, location, access, and compatibility with adjoining land uses must be considered. The sustainable building is placed on a site so as to take advantage of prevailing breezes and sun and shade conditions. A critical factor to consider in building placement is orientation. Proper north-south orientation allows a building to take advantage of the solar warmth in harsh colder climates and to limit the effects of the warm sun in southern climates. This may mean limiting north-facing envelope penetrations in colder climates, while maximizing south-facing southern glazing to capture the sun's warming effects. Likewise, a building can be sited to maximize natural or installed windbreaks. Case in point, for every foot of a windbreak height, there is a 10-foot downwind reduction in wind impact. Windbreaks also serve as "sunbreaks" that allow shading to reduce the need for cooling.

**Mixed Use:** Each land use can be oriented to improve the interaction between it and other compatible uses. For example, the practice of sustainability encourages mixing residential and commercial uses. This reduces dependence on vehicular transportation and encourages a healthier, pedestrian-oriented lifestyle.

**Landscaping:** Landscaping throughout the community should be native and xeriscape<sup>®</sup>. The term "xeriscape" means "water conservation through creative landscaping." Critical landscaping features include encouraging biodiversity, and creating effective storm water and erosion control methods. According to the concept of biodiversity, the landscape environment in nature is a system of plants that mutually exist to promote each other and animal life. Biodiversity in development projects produces an arrangement of a broad mix of plant materials that resembles the natural environment. This ameliorates dependency on artificial irrigation, and yields a building setting that is visually pleasing. Plant materials can also enhance the handling and processing of storm water, thereby reducing the likelihood of erosive conditions. Plant materials with strong root systems can be utilized to better hold soil in areas expected to sustain concentrated runoff. Likewise, grassed swales can filter storm water to reduce the velocity of storm water, while capturing silt and

contaminants. Site landscaping, though traditionally focused on visual appeal, can also have the functional purpose of attracting plants and animals, bringing the built environment closer to nature.

**Energy Efficiency:** The sustainable house contains energy efficient systems and is built of recycled or renewable resources that are safe and locally obtainable. Energy efficiency may be achieved through an assortment of methods including: 1) the use of windows with reduced air infiltration and low emissive glazing; 2) mechanical systems that operate more efficiently with upgraded ducting to reduce tempered air loss; 3) improved air infiltration and building envelope insulation; 4) improved plumbing fixtures that reduce water heat loss; and 5) appliances with energy saving features. Recycled products are available for roofing materials, manufactured lumber for floor systems and flooring, and insulation materials for walls and attic spaces. Low-emissive paints, mastics and finishes in carpeting, flooring, cabinetry and countertops are items that support healthy indoor environmental quality. Air quality is also improved through the installation of low velocity air-to-air heat exchange units that run continuously to bring in fresh outside air while exhausting stale inside air.

**Storm Water Management:** Entire neighborhood development packages can be arranged to better mitigate environmental impacts. Storm water, drainage systems, street paving and street design can all be planned in a sustainable manner. Conventional pavement surfaces, rooftops, or other non-porous surfaces cause an increase in runoff and reduce the opportunity for natural absorption. The effect is an increase in the amount and concentration of runoff. Standard practice is to construct storm drainage collection and conveyances with a discharge point to a creek, river, or ravine. The increased velocity of runoff flow at the discharge point often causes erosion or further complicates down-gradient drainage characteristics. Standard mitigation of runoff effects is conducted through the construction of large detention/retention ponds, which slow the flow of storm water from the site to release it at a predetermined rate.

**Alternatives:** Alleviating a storm water problem at its source is preferable to mitigating a problem at its terminus. Similarly, managing the dispersion of storm water flow in developments can obviate the need for a downstream solution. Using porous paving products, installing grassed swales, lengthening waters' pathways, and collecting storm water into constructed wetlands all improve the on-site handling of storm water. Storm water contaminants, such as greases or oils from parking areas, or herbicides and pesticides from lawn areas, are other urban problems that can be addressed in a sustainable



way. Storm water can be directed into constructed wetlands with vegetative filters that can “digest” the contaminants prior to discharge.

All of the above sustainable approaches involve the careful examination of present methods, and the selection of alternatives that achieve a healthy lifestyle by rethinking components of the built environment. Some of these changes are made by selecting different materials, and others are accomplished through the applying alternative development packages. In either case, the end result can be the same – an improved quality of life and minimized impact on the environment.

### **Vision of a Sustainable Community**

Thinking now about places where we live, envision a community where every resident is provided with adequate public, semi-public and private spaces. Housed in healthy spaces, residents are connected to other people and places in the community. Our vision of a sustainable community is one where a high quality of life is provided for all its occupants; one where every person can live with dignity and respect; and one where there is an encouragement of diversity, creativity, and healthy lifestyles.

A resident in a sustainable community feels safe and has full pedestrian and vehicular accessibility. Residents and visitors are able to observe nature and be comfortable within the natural environment; sheltering native vegetation abounds. Natural areas provide habitat for wildlife. A Community Supported Agriculture (CSA) program is part of the community’s resources, as is a Master Gardener program, sponsored by the local extension office. Community gardens are established where intergenerational sharing takes place. Affordable childcare and elder care are integrated into the fabric of the community.

Our vision of a sustainable community is one where safe and energy efficient buildings house residents within a community. A sustainable community is one where office, commercial and residential spaces are combined to allow for multiple living and working choices, and where accessory dwelling units are permitted by right on single family lots and cohousing is a living option. Home businesses can operate openly and be part of the community.

In the shops within a sustainable community, a customer can find a grocery store featuring organic and non-genetically modified foods, a home improvement store featuring healthy building materials, an eco-tourism travel agency, healthy-eating restaurants, solar powered equipment, a used book store, and a consignment store. There is a pharmacy carrying vitamins, minerals and nutritional products that support homeopathic and

integrative medicine solutions. The coffee house sells fair trade coffee, ensuring that all workers have received a fair wage. Other retail shops offer products from all over the world, with care to ensure no sweatshops or child labor were used in their production.

Finally, our vision of a sustainable community is one where natural areas encircle the community and are preserved to nurture and protect the rich biodiversity they include. Certain transition areas allow for human-natural connection: parks, pathways, trails, educational settings, organic gardens, and waterways. Every person can live a life that allows respect for human and natural life to exist in harmony.

### **Challenges to Delivering Sustainable Communities**

#### **Obstacles to Innovation**

We have proposed a vision for the type of land development packaging we believe ought to be available in the market. Any vision must be grand to encompass the opportunity to be sustainable. Change is not easy to accommodate, but the mission of ethical development planners is to seek out new ways to sustain a healthy future for American communities. A major challenge to the growth of sustainable developments is the absence of planning and regulatory policies that openly welcome innovative solutions for new development. However, a number of communities are adopting sustainable plans, which integrate coordinated local government policies and sustainable practices into their development codes. An additional obstacle to “mainstream” sustainability is the fact that environmentally friendly products or techniques are not easily available in the marketplace. Fortunately, as the sustainable movement has picked up momentum, noticeable changes have been made in the availability of sustainable goods and services.

#### **Resistance to Change**

Change in habits is sometimes forced upon us through catastrophic event. In the history of humankind, we sometimes only made changes just in time to avert catastrophe. In some cases we have preferred the “catastrophic event” path versus controlled change. But we now have the choice to make the right change. We know that we need to move to a more sustainable lifestyle. We know our resources are expiring. We know we have only one planet and that change is inevitable. Once we accept that change will occur and we understand that the planet cannot continue to support our present rate of consumption, we then understand that sustainability is the only logical choice. We have the ability and the responsibility to provide sustainable land development choices now.



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<sup>i</sup> Bruntland World Commission on the Environment and Development

<sup>ii</sup> Ray, Paul H. PhD, and Sherry Ruth Anderson, PhD. *The Cultural Creatives*. New York: Harmony Books. 2000: 4.

<sup>iii</sup> Smith, Blake. "Consumer Choices Shape Communities." *Land Development*. 2:v15.

<sup>iv</sup> The term "xeriscape" is a registered trademark of the National Xeriscape Council, Inc. of Austin, TX, a non-profit organization.