ANGLE and LINE

A Quarterly Newsletter by COWAN ASSOCIATES, INC.
Engineers • Designers • Surveyors
Serving Business, Municipalities, and Industry since 1958

LANDSCAPE ARCHITECTURE ANYONE?

By Bobbie J. Frindt, RLA

Would you prefer playing by an existing shade tree, or the newly installed tree?
Memorial Park, Jim Thorpe, PA

Did you imagine a landscape or a building? Most people hear and perceive one or the other, thinking "aha, that's trees and flowers in my yard," or visualizing "that's my house, the church, the building where I work." But rarely does one say, unless you know someone in the business, "aha, landscape and architecture."

Landscape architecture, simply described, is the artful manipulation of the land. While an architect creates buildings, the landscape architect creates the space between the buildings, from one door to the next. The vision for this space is generated from the parts of the landscape which collectively reflect the character and feeling for that particular place. The environment surrounding you gives a place definition in one's mind. This definition connects to the people, the place, the timeframe, and the culture. It is all part of what your senses discern when you move through a space, whether it's driving, walking, jogging, or even sitting on a park bench. This feeling portrays the ethos of the people who live there, their particular culture, and their value of the land.

The parts of the landscape are like the instruments in an orchestra; they can be arranged to create harmony or discord. In this way the landscape architect is akin to the director of an orchestra (or band, depending on the budget if you will). The landscape includes buildings, paving, site furnishings, plants, utilities for operation of the building or elements on site such as lights, and drinking fountains. Smaller architectural elements (restrooms, snack bars, podiums and pergolas) often become a feature in the landscape and may be designed in collaboration with an architect. Working with other professionals is a major part of landscape architecture to insure that the project vision is realized from the design of the overall masterplan down to the placement of individual bricks.

The masterplan or landscape composition is based on the client's desires and the landscape architect's vision. A drawing, a site plan of the property, shows the vision with all the landscape parts, both existing and proposed. Other illustrations and descriptions are prepared to guide the actual construction of the design.

As a visionary, my approach to landscape design is to identify the personality of the particular site through investigations and explorations on the site. The views, the fragrance

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The President's Corner

The universe is change; our life is what our thoughts make it.

As I look at our vision and mission to provide and maintain the highest level of value to our customers, this lofty quotation by the Roman thinker and philosopher Marcus Aurelius springs to my mind. In more simple down-to-earth thoughts, another old saying seems to fit: "you don't have to be bad to get better." Cowan Associates is asking questions; with every completed job we mail out a questionnaire to our clients and ask for their evaluation of our services. Whenever we have an opportunity to talk to our clients, we ask for feedback.

The answer is usually pretty clear. Our clients are generally satisfied, but there is always something that we can do better. And better we must do. We do this by continually refining our vision and detailing our strategic planning to define our clients' needs and mobilizing our commitment.

This year, we have completely upgraded our software and hardware to state-of-the-art technology, prepared an in-house health and safety plan, and are currently working on revising our quality control and risk management plans.

We ask you, the client, to continue your feedback so that we may know what we must be.

Cowan Associates, Inc. is "Going with the Flow"

By Angelika B. Forndran, P.E.

Flow monitoring, that is!! Cowan Associates is equipped with continuous recording flow meters, and offers the services of installation and analysis of data for flow monitoring in open channels. Cowan Associates has several Sigma 910 flow meters which measure flow level and velocity in continuous intervals as frequent as five minutes, if desired. The recorded level and velocity data is simultaneously used to calculate flow based on the input configuration of the channel – typically a circular pipe of a defined diameter. The data can be shown in table format and graphical format using the software provided with the meters. Cowan Associates has experienced staff who are knowledgeable in proper installation of these meters, data retrieval, and analysis of the obtained results.

There are numerous applications where flow measurements are useful. The predominant application is for infiltration and inflow (I&I) studies. This is a concern for sanitary sewer systems. Excessive groundwater can infiltrate the sewers through joints, cracks, and faulty house connections. Similarly, stormwater runoff can cause inflow to the

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of the season, the texture of the paving under your feet, whether walking along a babbling brook or driving through city streets, by an outdoor café, all contribute to the personality of the place. The character of the site brings the landscape to life (or not to life) for each participant. The intent is to create a good feeling, such that people say, "I like this space, I like living here, working here, playing here." Or conversely, the feeling may be one of reverence, worship like a memorial park or garden.

The vision evolves over time from the analysis of all the parts. However, the sum of the parts is not necessarily equal to the whole. Coordination of all things in the ground from electrical lines to water lines, including soil for the growth of plants, contributes to the landscape appearance on the surface. This appearance may tame, limit, extend or accentuate the environmental systems and special features of a property (streams, rock outcrops, knolls, etc.)

A landscape architect visualizes the proposed improvements in relation to the existing landform and site features. Being methodical and thorough in the site planning is critical to the success of a project. Working with the existing topography and natural features can only enhance a project. Not accommodating these features, whether on-site or off-site, will create a landscape space which is disparate from its origins. The shape of the land and the context of site always yield a unique identity, which will impact the relation between old and new, directly or indirectly.

A property enhanced by an appropriate landscape benefits everyone, the client, the owner, municipality, the users, and the environment. Many townships require compliance with building codes, safety codes, environmental standards for any disturbance to a property. Any change in the water flow on-site or off-site requires specific site elements to facilitate infiltration and limiting flow of water from the site. Disturbance of the land for installation of buildings, parking lots, or any other site elements requires measures for erosion control of the exposed soil, both temporarily during construction and permanently post construction. A landscape architect designs these elements to be harmonious with the vision of the property.

A landscape architect provides coordination with township officials and assures the design complies with the intent of the law in regard to safety and official building codes. Municipal codes for changes to the property include two main code sections – zoning and land development – as well as approvals by specific review committees, such as the historic district or arts commission. Fire access; handicap access; vehicular access for cars, tractor trailers, service trucks, and limousines are some of the circulation conditions requiring specific site layout to meet building codes and standard day-to-day operations of a facility. With the ever increasing use of the vehicle, new buildings require specific number and layout of car parking spaces for employees, customers, deliveries, visitors and the like. New buildings require careful location within the site to meet the code set-

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backs, appropriate screening between different developments, and desired or undesired views.

The end result of the built landscape reveals the quality of project. For example, minimizing length of utility lines makes installation and operation more efficient. It also minimizes site disturbance, which means fewer replacement materials, and less costs. Designing for the proper pedestrian and vehicular circulation within the site and program constraints makes the site user friendly for the homeowner, the employees, service vehicles, or the customer. The design may accommodate alternative construction materials for cost and maintenance evaluations. The bottom line is that planning of site renovations will save money over the long run.

The location of site vegetation in relation to buildings, plazas, and decks can impact the costs of heating and cooling. Utilizing deciduous trees and coniferous trees as well as combinations with shrubs can break wind flow and redirect it around and over the house, shade the house in the summer to reduce surge on electric services, allow sunlight to warm the space in the winter to reduce heating costs.

Existing landform and vegetation features can provide immediate benefits to a site. Knolls and highpoints provide nice views off site to the city skyline, the township fireworks, or the setting sun, as well as views onto the site to invite potential customers or occupants. Existing vegetation which is healthy and structurally sound creates an immediate visual effect. These landscape features all contribute to the value of the land.

Is it a good practice to fill a stream or swale with concrete or metal pipe, filling in the channel, flattening the surface, speeding the flow of water, eliminating an environment for nature, nature study, a special place? If you think so, then consider the mountain retreat or the seashore vacation home. Both of these properties contain existing amenities that increase their value. With a vision, proposed renovations will not only accentuate the existing amenities, but also boost land values.

Consider living with a beautiful stately Oak or Maple tree in your back yard, providing shade for the family reunion picnic. Or is it acceptable to live with a small stick-sized young tree that will take a minimum of twenty-five years before it provides some shade (and 50 years before it provides as much as an existing mature tree)? New young plants definitely increase the value of a property, home or office or park; however, when these same properties also contain mature vegetation, their property value is increased proportionately.

In one example, the New Albany Company in conjunction with the Ohio Department of Transportation designed the development of a residential district, a new high school and an expressway interchange around an existing natural feature, a wetland and woods of some thirteen acres of prime real estate. Federal government regulations require developers to replace degraded wetlands. Previously, the typical development solution was to pay fees to another wetland conservation area in lieu of maintaining an existing one. However, there can be direct economical and ecological benefits to preserving and accentuating a wetland or other natural ecosystem. The number of nature lovers and eco-tourists flocking to the shores, the fens and marshes, and other eco-systems across the United States reveals the direct economic benefits of preserving and creating these wildlife preserves. The design team in Ohio elected to incorporate the wetland as a natural amenity, which is preserved as a natural park at the center of the development.

Several benefits came out of this design, including the following: house values around the border of the park along with the whole district are rising; the local school has created an environmental curriculum; a successful wildlife preserve is located within a manmade environment and provides access for locals and visitors; this wetland area reduces water loss while controlling potential storm flow by a three stage water control system; the wetland also mitigates pollutants in the stormwater runoff. A main component of the system is the natural water retention system. This system includes plant selection for specific ecological zones, pool design and precise grading of the landforms to create three distinct ecological zones in a single wetland. These three distinct ecological wetland zones make this Ohio project unique. Think of maintaining natural features on site as preserving a piece of geological history in your own back yard, while increasing the land value.

Other fringe benefits of preserving existing site features include the creation of comfortable, functional landscapes and outdoor spaces which offer pleasant experiences for people. These pleasing environments will improve employee morale, invite customers and visitors, even friends and neighbors. Site landscape improvements facilitate replenishing the earth with water infiltration, generation of oxygen, cleaning the air and water, and reducing the toll on municipality systems such as stormwater and electricity. The value of preserving our environment for future generations is not measurable, except by the

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HUMOR

A young engineer was leaving the office at 6 p.m. when he found the CEO standing in front of a shredder with a piece of paper in his hand.

"Listen," said the CEO, "this is important, and my secretary has left. Can you make this thing work?"

"Certainly," said the young engineer. He turned the machine on, inserted the paper, and pressed the start button.

"Excellent, excellent!" said the CEO as his paper disappeared inside the machine. "I just need one copy."

PRETTY AMAZING, HUH?

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Aoccdrnig to a rseearchre at Cmabrigde Uinervtisy, it deosn't mttaer in waht oredr the ltteers in a wrod are, the olny iprmoatnt tihng is taht the frist and lsat ltteer be at the rghit pclae. The rset can be a tatol mses and you can sitll raed it wouthit porbelm. Tihs is bcuseae the huamn mnid deos not raed ervey lteter by istlef, but the wrod as a wlohe. Pterty amzanig huh?

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impact on our children, our grandchildren, great grandchildren, and their children's children, and so on. As owners and designers it is imperative that we embrace the environment and become part of the solution. If we are part of the solution, the economic and ecological benefits will follow.

The end result of the built landscape reveals the quality of the project. A landscape architect creates designs unique to the site and situation; some serve as adventure and play spaces, places for relaxation and entertainment, community gatherings and events. The key to a successful landscape is preservation of and complementing our environment while meeting the clients' needs. It is the presence or absence of people and nature that ultimately determines the success of a design. One test of success is if the place looks and feels like it belongs, as though God placed it there.

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system by directly flowing into poorly sealed manholes – around chimney sections and under frames or covers. Often stormwater flows directly into sanitary sewers through connections of downspouts, broken cleanouts, driveway drains, or sump pumps. These are illicit connections, but often the owners are not even aware that these discharges are connected to a sanitary sewer rather than a storm drain.

This excessive I&I entering the sewer system costs the municipality money and affects operation and maintenance. Excessive flow fills the sewers, taking away necessary capacity for wastewater, affects treatment by increasing hydraulic load to the plant while diluting wastewater strength, and often leads to exceedances of regulatory permit requirements. Cost of lost capacity, pumping of excessive flow, added maintenance, and potential regulatory fines can be significant. Flow monitoring is one approach to understanding the operation of an existing collection system, determining the sources of the I&I, and evaluating what sewer system rehabilitation will be cost effective in reducing I&I.

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