



# OnGrowing Works Ltd.

## OnGrowing Works ...Recipient of Three Provincial Awards!



In early February, the staff of OnGrowing Works traveled to Banff for LANTA's annual Meeting in the Mountains. Along with attending a number of seminars to improve the quality of service we offer to our clients, we attended an awards dinner in which OnGrowing Works was awarded three provincial awards. OnGrowing Works is



proud of the awards of excellence for the Hoogstraten and Tamagi residences as well as the award of merit for the Haskayne residence. The two awards of excellence have been nominated for a national award...to be announced in February 2006. OnGrowing Works would like to offer a sincere thank you to all of our clients for allowing us to do what we truly love doing...creating a relaxing and functional environment for you, our clients, to enjoy!

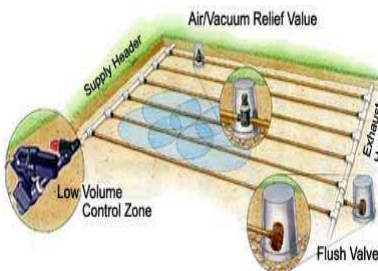


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## WHAT'S NEW...

SSDI: sub-surface drip irrigation, an idea that's been around for over half a century is coming into its own. First developed by an Israeli company called Netafim, it was designed to put the right amount of water where the plant needed it, at the roots, and avoid the waste of evaporation, runoff and poor targeting of spray or surface irrigation. One of the design challenges to overcome was plugging of the drip emitters. All water contains some particulate matter, even well filtered water. A plugged sub-surface emitter will not be detected until it results in poor plant performance. As well, it cannot be readily unplugged or changed out like a surface emitter. Four separate solutions contribute to keeping the emitters operational. First, adequate filtration must be installed. Second, an automatic flush valve is installed to flush a relatively small amount of water with sediments out of the system every time it starts up. The third design feature is that the emitters create turbulent flow and then emit water from the middle of the flow, which contains less particulate matter. Soil ingestion, the drawing in of soil particles that can plug the emitter, is prevented by the installation of a vacuum break valve. Another problem with SSDI is to ensure that the emitters all emit at the same rate regardless of where they are in the system. The solution: pressure-compensating emitters! The SSDI tubing can be supplied with emitters of different flow rates, and different spacing, to match soil infiltration rates, plant requirements and design requirements. There are several companies that manufacture SSDI, so there is some choice and competition in the product. Finally, SSDI can be installed as a stand-alone system in turf, beds and trees or, because it delivers a matched precipitation rate, it can be installed in a hybrid system with conventional irrigation products.



## WATER



Last issue of the newsletter, we promised that water would be a regular subject. After one of the wettest summers in recent memory, we might well be lulled into thinking it's no longer an issue, but the fact is that although surface water may seem plentiful, long-term reserves like aquifers and glacial ice are still disappearing. As well, population growth continues with accompanying domestic and commercial and industrial demands.

A news release of Jan 19 05 states that Calgary will be implementing a by-law this spring making the installation of low flow household fixtures mandatory in renovation and new construction.

With the same goal in mind, the City of Calgary has a "water-managed site" certification program. This program applies to residential and commercial sites that are watered by an audited automated irrigation system. There are several benefits to this program.

The first, of course, is to have healthy, beautiful plants. A well-designed and managed irrigation system avoids both over and under watering. Most people realize that too little water, drought, can result in poor plant performance and even plant death. Less obvious but just as significant are the effects of over-watering. One very dry summer, we replaced several newly planted trees that had died by drowning from sub-surface water from a neighbor's over watered yard! Over watering can also encourage attack by insects and disease, and can result in poor root development. Plants and lawns with shallow roots suffer even more in times of water restrictions.

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The second benefit is economy. Making every drop of water count in the landscape saves money on water, fertilizer, maintenance and ultimately taxes.

The third benefit for Calgary residences is relaxation of water restrictions and bans for certified water managed sites.

You can learn more about this program by visiting [www.calgary.ca](http://www.calgary.ca). Click city hall>business units>water works>lawn and garden>water managed sites.

As a landscape construction company, OnGrowing Works encourages our clients to consider an automated irrigation system when renovating a landscape or doing new landscape construction, or even as a retro-fit into an existing landscape. Please contact us for reference materials and more information.



## Annual Pick of the Season...

### **Osteospermum 'Orange Symphony'**

Need a splash of color in your garden or planters? This bright orange osteospermum looks spectacular when combined with purple petunias or scarlet geraniums. A smaller annual, only 30-40 cm. tall and ideal for hot, dry locations.

## Defending Trees Against Injury

It is difficult not to appreciate the beauty of trees. The blossoms of the apple in spring, the mass of green foliage of a great poplar, or even the glimmer of silver hoar frost on the branches of a willow in the winter. Trees truly are an essential part of our lives and yet our understanding of these organisms is quite limited. In actuality a lot of what we know about tree biology has only been discovered in the last decade or so. I wanted to explain a little about tree biology and anatomy and why correct pruning practices are so important. From this you will also be able to understand why any sort of physical injury can be very detrimental to tree health.

To start, let's compare trees to other common organisms found around these parts, humans. Every organism, and it doesn't matter whether it is a plant or animal, must undergo similar natural processes. All must rest and then be able to start again. Energy must be consumed to maintain order and they must grow to defend themselves and reproduce.

Humans and most animal organisms have regenerating systems. They have the ability to repair and replace cells, and because of this must eat daily and not much energy is stored. They grow until they reach adult size and then stop. Trees on the other hand are generating systems. They add on more and more cells and get bigger and bigger. Trees store the energy they were able to manufacture during the growing season. If for some reason the stored energy is depleted, the tree is in big trouble. It cannot be fed, as it must manufacture its own food. This is important because the energy is stored in the mass of the tree, and if large sections of the tree are removed, then obviously the tree no longer has access to that energy. Not only that but because the trees cannot readily repair the damaged cells (they can only produce new ones) they cannot "heal" the wounds. Instead they must seal them off with walls of new wood.

No profession is complete without its own set of jargon, so here it comes...

C.O.D.I.T (Compartmentalization of Decay in Trees). When a tree is wounded, the tissue and cells adjacent to the wound go through physiological and anatomical changes. Stored energy reserves are converted to inhibitory substances that resist and form boundaries against potential pathogens (bacteria, fungi, viruses). These defend the rest of the tree from further harm (hopefully). This area is known as the "Reaction Zone". The reaction zone consists of three walls:

Wall 1: Resists vertical spread of decay.

Wall 2: Resists the inward spread of decay.

Wall 3: Resists the lateral (circumferential) spread of decay.

The next zone is the "Barrier Zone" which separates the infected inner wood from the healthy new wood which continues to form after the barrier zone is in place. This zone forms a "callus" but differentiates to form "wound wood". In time, this tissue will cover the wound and encapsulate the wound at the time of the injury. The barrier zone offers the strongest protection against pathogens when we discuss C.O.D.I.T, but lacks structural strength, as there is a disruption in the design of the woody tissue. If cracks develop along this zone, the wound may become a site for ring shakes and frost cracks.

The strength of the C.O.D.I.T system will vary among tree species. Some trees can activate the reaction zone so quickly, that if infection takes place, the volume it occupies is quite small (e.g. Oak). Other species may react quite slowly or poorly, which will lead to larger areas of the tree being infected (e.g. Poplar).



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## Shrub Pick of the Season...



### Barberry...

This shrub offers a wide range of versatility in the landscape, be it through the color or the form. Whether through the compact, bright yellow barberry or the graceful arching branches of the crimson colored barberry, this shrub provides a striking contrast within the landscape.



## Tree Pick of the Season...

### Silver Blue Spruce ...



Have you ever bought a Colorado Blue Spruce for it's blue needles, only to find that they turn green? The Silver Blue is a hardy spruce, known for its silvery blue needles that never turn green. The silver blue is an outstanding contribution to any landscape, adding contrast and color all year round. The Silver Blue is comparable to the Colorado Spruce, growing 20 m. high and 7 m. wide. Grown exclusively through Everblue Nursery (247-2787).

## Defending Trees Against Injury....continued from page 3

So what this ultimately means is that this process is not healing. It does not repair damage. The tree is giving up energy reserves and a part of itself, as an entrapped wound now occupies some of its physical space. I.e. every wound that we make and the tree takes can have a dramatic effect on the health and the structure of the tree.

Having said all that we move on to the concept of the "Protective Zone". Trees are shedding organisms. I know it is hard to believe, especially in the fall, but it is true. Trees set up their systems in such a way that enable the tree separate parts of itself, at certain key points in its structure. Trees do this with their branches as well as their leaves. It is this, which we will call the protective zone. It is located at the internal base of a branch and is a designated boundary for defense. Thus when a branch dies or is pruned, chemicals from stored energy are concentrated at this zone to help resist the spread of infection into its healthy mass. The barrier zone forms most strongly at this location.

So finally, this is why it is important for proper pruning to be done. If done correctly we use the trees own natural defense methods to protect itself, and if done incorrectly, we limit the trees methods it has to protect itself from further damage from disease and pathogens.

