Closest to pin (#10) - Ray Mertens
Longest putt (#13) - Fred Millies
Longest drive (#17) - Dale Parske

An excellent steak dinner was followed by our featured evening educational speaker, Dr. Wayne Kussow, University of Wisconsin-Madison Professor of Soil Science. Dr. Kussow spoke on the many benefits of fall nitrogen fertilization on golf course turf. Those of us who are currently advocates of fall fertilization are all reinforced in our practices, while those of us not into nitrogen in the fall now have some food for thought. Everything about this meeting was really great — great golf course, great food and great hospitality! I really think it's fair to say that the day was truly enjoyed by all.

The raffle prize for the evening was especially nice - one year's free use of an E-Z-Go Utility vehicle, provided again this year by Gary Monfre. The winner was John Krutilla.

FIELD DEMONSTRATION— 1986

Ransomes Introduces New Triplex Greensmower

by Monroe S. Miller

When you go to purchase a new triplex for either greens or tees (or nowadays, even fairways!) you'll have another machine to consider. It's called the Ransomes GT (greens triple) and it was offically introduced in Canada last October.

This is a new-from-the-ground up machine, not a remake of the old Hahn! It was designed by Ransomes, Sims & Jeffries of Ipswich, England and for the time being it will be manufactured there. Nevertheless, Johnson Creek had one around the plant and on several Wisconsin golf courses last summer (there was extensive testing all around the country during the mowing season) and a number of us saw it and used it.

I don't know if you could call it revolutionary or not, but it certainly has some new and interesting features. It was designed around a Kubota 570cc 2 cylinder diesel 12 hp engine. No other power plants are available as options. When you do that it seems you get a very balanced looking machine with excellent engine accessability for maintenance and repair. The engine, by the way, is water-cooled as you would expect and is very quiet.

First look begs the question, "How do I get to the middle unit?" It is actually very easy - trip a lever and the spring loaded seat/foot control assembly lifts right up, as in the photo. You then can literally walk "inside" the machine. The grass catcher comes out easily.

There are some real nice features to the unit - you can remove reel motors from reels and reels from their frame without any tools or oil spills. The mower has the standard backlapping capability. The engines of this machine have made quite extensive use of electronics in controlling the system hydraulics. They've got a digital readout near the operator's right hand that gives the cutting frequency (cuts per meter). You can pre-determine the ration, you like for the mowing and maintain that for every green (or tee). Use of the transport speed does not affect this selection. It's all rather neat.

Although I didn't personally mow with it on my golf course, I did drive it and have seen it several times. Tom Harrison used it for a week and was favorably impressed. He mentioned a need to reduce the turning radius and I believe that changes is coming. They do offer verti-cuts, spikers and 6 blade reels as options.

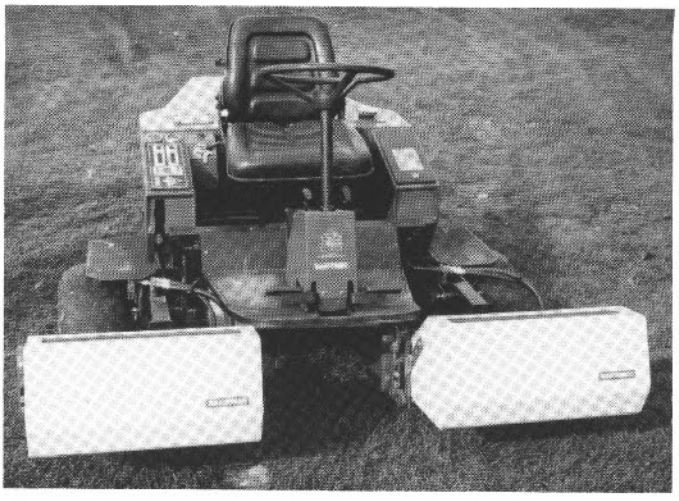
(It seemed to do a good job of moving putting surfaces - it comes equipped with a 9 blade reel.)

My hunch is that the machine will receive a lot of attention in Phoenix and will be extensively demonstrated next summer. Cost figures are not yet available. As Tom said, considering the somewhat limited greens - mover market, "You don't need to build another mousetrap, you have to build a better one."

Ransomes thinks they've done that.

Continued on page 12.

Continued from page 11.

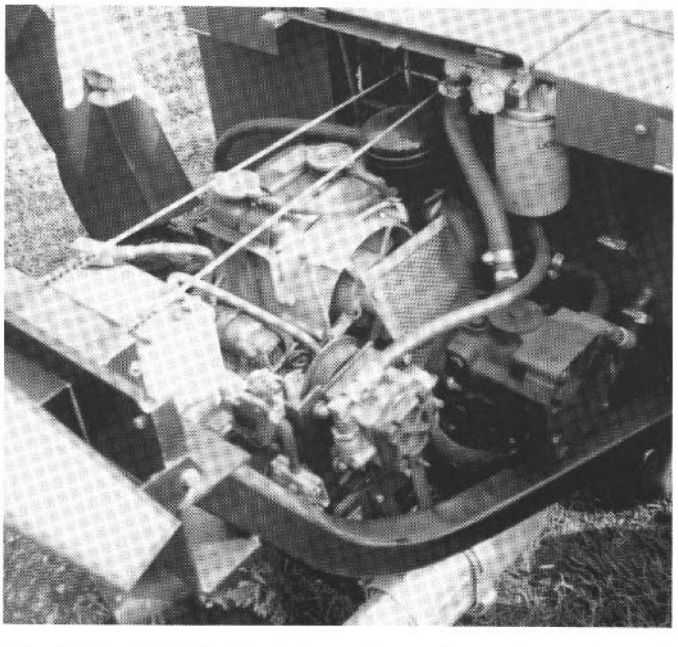


The new Ransomes GT.

The cutting units are easy to remove.

The middle unit is more assessible than you might guess. Ted Woehrle flew into Madison and stopped in at Maple Bluff for a preview of the machine.

Ted Woehrle and Tom Harrison inspect the finished product at the Bluff.



The Kubota diesel is easy to get at for maintenance.

Another unit to choose from when selecting a greensmower - The Ransomes GT.

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DRAINAGE: LESSONS LEARNED IN 1986

By James M. Latham,
Director Great Lakes Region, USGA Green Section

One of the unique properties of water is its capacity to exist as a solid, as a liquid and as a gas at temperatures within the normal range of biological activity. We know that, but perhaps have not appreciated the implications of this property until a year like 1986 rolls around. Seldom has any key element in turfgrass management become so downright vile and contemptible for such an extended period over such a wide expanse of territory and in such a democratic manner. The unfortunate thing about this is that few turfed areas other than golf courses suffered damage. In fact, I can't think of any at the moment, but surely golf was not the only condemned classification.

By now all the alibis have been used, blames placed, remedies prescribed and work completed to get things green again. But have the necessary steps been taken to prevent recurrences even if the problems seem unsurmountable? Let's see. In the epicenters of damage — Southeastern Wisconsin and Northeastern Illinois — the problems began last November with saturating rainfall and surface icing by early December. Normal weather followed until a thaw in late January. The kicker was an extremely quick, deep freeze to about 20 degrees below zero. Later in the winter/spring came a series of freeze/thaw cycles. This combination led to damage from crown hydration, caused by ice crystals forming within and between water saturated plant cells in bunch grasses like **Poa annua** and ryegrasses. The faster the freeze, the larger the ice crystals, hence the most potential damage. Mike Vogt, Superintendent at Illini Country Club, wrote a very good descriptive article on this for his members.

Spring greenup brought good news and bad news, depending on how or where things were not green.

1. The folks trying for ryegrass fairways were badly hurt wherever snowcover was lost in January.
2. The folks trying for **Poa annua** control should have been pleased, because bentgrass and bluegrass survived.

Damage was minimal where drainage was good. The degree of severity was varied, but depressions in the surface, flat spots and slow-to -drain swales were most heavily damaged.

If that didn't get the water-watchers on the ball, the fireworks **after** the fourth of July did. Again, water was blamed for a multitude of sines of omission. Steady rains which saturated the soil and thatch preceded a period of high day and night temperature. The water at the soil surface became a solar heat collector. The roots were deprived of an oxygen supply so that those which did not die were not very effective. Plant tissue was again saturated, just like in the spring. It bruised easily. . .even squeegee pressure hurt it, not to mention those feet and mowers. Plant functions almost ceased, to the point that systemic fungicides were ineffective.

The occasionala bug got into the act again this summer. Cutworms, of course, made three or four bombing runs and at least one set of sod webworms settled in on Detroit greens. Grubs are spreading over larger and larger territories so that "rollemup" sod is becoming rather common in the Indiana/Illinois area..

Now came our very best time of the year for the Region. The glorious fall! But where did it go this year? The greens rebuilding operation at Aurora Country Club lost two or three weeks so that planting is very late and will require some kind of winter protection. The new River Run course in Kohler, WI has lost a season of play because of the tremendous amount of erosion in spite of excelsior matting on steep slopes. What lessons can be learned from the three states of water damage this yeara? Try these:

1. Internal drainage is useless in frozen soil. Thaw water must move across the surface.
2. Internal drainage is priceless in getting oxygen needed for respiration to the root system
3. High relative humidity significantly slows evaporative cooling in the daytime and reduces radiation cooling at night.
4. Evaporation is aided by air movement, especially under conditions of high relative humidity.
5. The climate in which turfgrass producers are interested is only a few inches high. We don't worry much about the waving of the flag, but how far down the flagpole the wind effect goes.

Water must move through and off the surface of the soil, quickly. This means more drainage is needed than **any** present golf course manager or **all** his predecessors ever thought about. Why? Just plain preventive management. Can anyone imagine how much havoc would have been wreaked if there had been **no** drains?

Early season (March) soil sampling forcefully brought anaerobic soil conditions to the attention of anyone who put the aromatic cores into a warm room. Late October inspection of aerifier cores showed the same. They were all over the place in mid-July. Not all of these "Black Layers" were in greens, either. They can occur anywhere that organic matter exists in an oxygen-depleted environment. Don't blame the well drained sand topdressing, but the impervious soil below it. Don't blame the anaerobic microorganisms which generate the hydrogen sulfide and related aromatics, blame the excess of water or really, the inadequately drained soil or the layer of thatch covered up by topdressing. The anaerobes only mirror the soil condition. Get air into the soil and the problem will go away.

Blame, however, should not be foremost in the mind of anyone in golf course management after this season. Sensible thinking would consider the 1986 season as being a guide to the design and installation of the ultimate golf course drainage system. It also demands a reassessment of fungicide plans to always have at hand an emergency program in which specific, **nonsystemic** fungicides can be used. And now that winter weather is upon us, the firewood opportunity presents itself to those whose turf was subjected to inadequate air movement because

of undergrowth and/or trees. I hear of many incurable tree diseases this fall.

The 1986 season had no respect for location, budget, play history or age. The survivors were blessed with permeable soils, or better than average surface drainage, or an ongoing thatch management program, or the **good sense** to close the course, quit mowing and allow the grass to stay alive. The real losers are those who tried to make the grass do their will.

We all learned a great deal this year. If we retain the principles taught by this lesson, our turf will not have died in vain. If we do not, we'd better move to Madison or Green Bay.

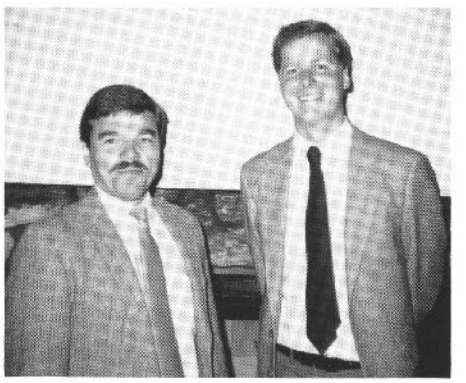
CHEROKEE HOSTS OCTOBER WGCSA MEETING

Over fifty "die hard" WGCSA golfers gave a very gallant effort on the golf course while our more intelligent members attended only the evening dinner meeting as the October WGCSA meeting was held on Monday, October 13 at Madison's Cherokee Country Club.

Fifty degree temperatures with a mid-day chance of rain didn't deter in the least our brave and hardy members. We all teed off for a noon shotgun, realized that the golf course at Cherokee can get somewhat soft (especially with all the September rain) and then wisely decided at the nine hole midpoint in our memorable rounds (when cold rain returned for the duration of the day) that the 19th hole, sauna, and hot showers looked in need of our attention and business. A round of applause, please, for those two foursomes who displayed remarkable tenacity and total disregard for prevailing weather conditions and actually finished their 18 hole rounds!

Golf awards winners (based on 9 hole scores) are as follows:

1st place low gross:
Dick Evenson
2nd place low gross:
Bruce Schweiger
1st place low net:
Bill Roberts
2nd place low net:
John Gallus
Shortest Drive #1:
Tom Schwab (as usual)
Longest Drive #6:
Dick Evenson
Closest to Pin #8:
Charlie Frazier
Longest Drive #12:
Bruce Schweiger
Closest to Pin #14:
Bruce Worzella
Longest Putt #18:
Myron Seaver



Golf Course Architect Bob Lohmann and Cherokee Golf Course Manager Pat Norton.

Blind bogey winners are as follows:

Pat Norton
Dale Marach
Ed Devinger
Mark Kienert
Ted Payne
Bob Petsel

A superbly prepared prime rib dinner and excellent hospitality were enjoyed by 67 WGCSA members and their guests. The evening program featured guest speaker Bob Lohmann, Golf Course Architect, of Lohmann Golf Designs, Crystal Lake, IL. Bob's topic was '*Sand Bunker Design and Construction*', a subject of interest to everyone in attendance. Lohmann's talk was highlighted by a series of very beautiful and interesting slides that he's accumulated over the years on bunker design, bunker construction, and golf course design in general. Sincere thanks to Bob for sharing his knowledge, ideas and opinions with our group.

Thanks also to Ed Devinger and Reinders Brothers for sponsoring our now famous WGCSA research raffle for October. Their generous donation of three AM/FM cassette recorders were very fine prizes for three very deserving raffle ticket buyers.

Last of all, thanks much to host superintendent Pat Norton and his staff for their time and effort in preparing Cherokee under very adverse conditions. Under the circumstances, a job well done.

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"THE QUIET COMPANY" MMSD Research Support at the University of Wisconsin-Madison Exceeds $15,000 in 1986

by Monroe S. Miller

There is no human trait I have more respect for than humility. It is a characteristic common to great men. And I feel that can also be said of some companies and institutions, as well. They are, after all, really only the people who lead them. One of the best kept secrets in Wisconsin is the extremely generous support extended by the Milwaukee Metropolitan Sewerage District to the UW-Madison Soil Science Department for turfgrass research. This year their support for research will exceed the $15,000 mark. Most of that sum has gone toward Dr. Wayne Kussow's work. The figure is startling and we should all be impressed.

Since Milorganite was first conceived, MMSD (originally the Milwaukee Sewerage Commission) has been supporting the UW-Madison's Soils Department with research monies. They first supported the famed Dr. Emil Truog with funds for O.J. Noer's fellowship while he was a graduate student in the Department, studying under Dr. Truog. Over the many years since that time, they have given financial support to Dr. Jim Love, Dr. Wayne Kussow and other researchers in the Department.

For a research investigator to have a really successful and meaningful program, funding needs to be available on a continuing, rather than one-time, basis. MMSD will be maintaining their current level of funding through 1987 and 1988. There is a strong possibility these levels could go up over the years. The staff at MMSD wants to support research at their own state land grant college as much as possible and they are to be commended for this wonderful attitude.

Too often, the public feels a company donates research monies to an institution of higher learning for selfish reasons. It is true that they may have an interest in a particular problem. But they are far from the only beneficiary of such support. They do get independent and unbiased product research done, no doubt. But the university benefits greatly, as well. Funded projects frequently fit into an investigator's overall program, and the resources made available from those funds can be used elsewhere in his program. Graduate students are supported through assistantships; undergraduates are able to get field and research experience. Equipment and supplies not normally purchased are bought with such monies. Researchers are kept out front in the latest developments. These same research studies can become the focus for publication in technical journals. Taken together, these many and varied facets of a research program amplify the good reputation of the university benefactor and of the faculty involved. Everyone wins in a situation like this, but probably no one any more than the man in the field. He benefits from new knowledge that results from research.

No company has had more interest or a more intimate involvement in the golf turf industry in Wisconsin in the last 60 years than the people at Milorganite. O.J., Charlie Wilson, Bob Welch, Jim Latham and now Jim Spindler are not only our good personal friends but outstanding citizens in our business as well. Let's not forget they were probably the first to support turf research at the UW and have, quietly and with humility, continued to do so for decades. By direct donations to the school, funding through the Noer Foundation and by organization of the Symposium, this group of people has demonstrated the true meaning of giving.

Let's applaud them.

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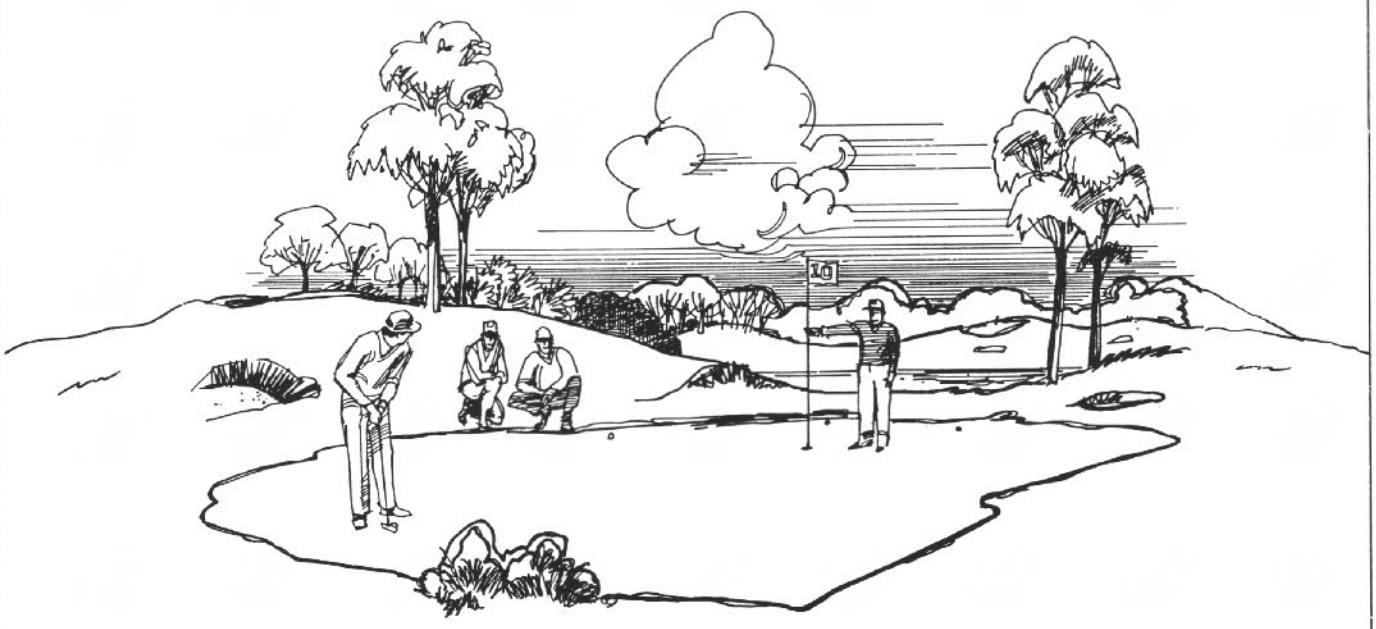

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ADDING FLOWERS TO THE GOLF COURSE LANDSCAPE

by Dr. Lois C. Berg
University of Maine at Orono

Flowers for many years were almost exclusively in separate "flower gardens," whether in private yards, commercial landscapes or public gardens. Landscape architects and contractors traditionally relied on evergreens, deciduous trees and shrubs, turf and a few groundcovers. Flowers were reserved for the avid gardener, and flower gardens were an afterthought to the landscape design.

Times have changed! The fine line that once separated landscaping from gardening has blurred, and more flowers are being used everywhere — not just in flower beds, but as integral parts of the landscape. The increased use of low-maintenance annuals, perennials and bulbs can be seen in the landscapes of gardeners and non-gardeners alike, creating an urban environment that changes dramatically from one season to the next.

These changes are evident on golf courses, too. In the past, flowers were found only near the clubhouse. Bulbs added a spark of color in spring, and summer color was derived from sunny beds of marigolds and geraniums, and from shady beds of impatiens. Recently, the use of flowers on the golf course has expanded greatly. Many golf courses have added perennial gardens, wildflower plantings and non-traditional groundcovers. But even more exciting, there has been an increased emphasis on the use of flowers as specimens, much the same as shrubs have been used in the past.

Flowers have much to contribute to the golf course landscape. One obvious attribute is color — flowers offer an endless array of shades, hues and tints from early spring until hard frost. A second attribute is variety. Flowers vary tremendously in texture, color, size, shape, habit, season of flowering and foliar interest, making possible an infinite number of combinations. A third and perhaps more subtle attribute is the effect of that variety on the landscape. Flowers change dramatically from one season to the next. A landscape of trees and shrubs can be quite constant, but a landscape using flowers changes constantly. Each season has its own look: a touch of color brightens the spring landscape, full color develops in summer, textures emerge in autumn, and the color of flowers gives way to the architecture of trees and shrubs in winter. This change can be a great asset on a golf course, relieving the sameness of the view from one week to the next throughout the season. Even the pros appreciate a change in the scenery!

Making the Selection

With thousands of annuals, perennials and bulbs available, it can be a challenge to select the right plant for the right place. There are several basic factors which you should consider first, however, and these factors will help you choose specific plants.

First, consider hardiness. Of course, this is not an issue when choosing annual flowers, but it is the single most important factor in selecting perennials and bulbs. Take the time to visit perennial nurseries and observe public and residential plantings to see what plants are hardy in your area. Check with a landscaper, garden designer, or better yet, a long-time local gardener. Catalogs can be quite misleading, since they classify plants by generalized hardiness zones. Be aware that some "hardy" plants require mulching over winter to survive, while others are reliably hardy with no protection at all.

Second, match the flowers to the environment. There is no flower for every location from dry shade to wet sun, but there is no single flower that is adaptable to all environments. Consider the soil (pH, soil temperature, nutrient levels, moisture levels, texture, drainage), temperature (frost dates, reflection of heat off buildings, diurnal fluctuation), light (intensity as well as duration), wind, precipitation and weed problems. It is far easier to manage flowers that are planted in the proper environment than those planted in a location to which they cannot adapt.

Third, give top priority to plants that are low-maintenance. Remember that low-maintenance does not mean no-maintenance. Most flowers require more work than trees and shrubs. Most annuals, for instance, require deadheading (removal of spent flowers to encourage rebloom) at least weekly throughout the season. Most perennials should be cut back after flowering. Some flowers need weekly pest control, some require seasonal pruning, several benefit from staking. None of these maintenance needs should in and of itself eliminate a plant from your list, but they should be considered before plant selection.

Fourth, aim for long-lived perennials and bulbs and full-season annuals. Most perennials flower for only a few weeks during the summer, but their value in the landscape increases with age. Short-lived perennials may perform well for one or two years but decline or die in subsequent years, making them fairly high-cost plants. Some bulbs are quite permanent, lasting for many years, while others become weak after only one or two years. With the high cost of installing bulbs, it's worth taking the time to select those that will last for many years. Many annuals will flower over the entire summer, but some will stop flowering in the heat, and others require pruning and deadheading to promote season-long flowering. Still others will burn out and die before the end of summer, leaving a bare spot in the landscape. Visit public gardens and trial gardens sponsored by seed companies and the All-America Selections organization to evaluate new annuals for performance. Wisconsin is fortunate to have several excellent public gardens, trial gardens, and an official site for All-America Selections evaluation — make use of them!

Fifth, consider how long and at what time of year flowers are effective. Some annuals, like impatiens, flower the entire season with very little if any maintenance. On the other hand, most perennials flower for less than a month, but many have excellent foliage and form for the entire season. Some perennials, like several of the ornamental grasses, are effective even in winter. Match your needs with what the plant

offers.

Sixth, always consider function before beauty. Remember that a golf course exists primarily for the game of golf. Flowers should not interfer with that game. Flower beds and borders should be placed near the clubhouse where the public can observe their beauty, or between holes and out of play. On the other hand, the course can be beautified through the judicious placement of flowers among shrub and tree borders, along fences and near benches.

Suggested Uses

The design possibilities for flowers on the golf course are endless, but here are a few ideas based on the above guidelines. Unless otherwise stated, these are full-sun plants.

* Use **Astilbe** x **arendsii** as a groundcover in a shady place. Several red, pink and white cultivars are available, flowering for 3-4 weeks in July and August. Astilbe is very hardy, requires no maintenance except for cutting back in fall or spring, and cutting off old flowers after flowering. The foliage remains an excellent coppery green the whole season. Astilbe is generally a pest-free, very hardy perennial. It reaches 2-3' in height.
* Incorporate **Sedum spectabile** 'Meteor' or 'Autumn Joy' into shrub borders. The pink-red flowers are effective for over a month from late summer to early fall, and can be left on the plants to add texture to the winter landscape. The apple-green succulent leaves are very high quality for the whole season. This perennial is virtually pest-free. Both cultivars reach a height of 24-30".
* Use an ornamental grass like **Miscanthus sinensis** 'Gracillimus' in shrub borders or along a fence. The 5-foot tall plumes of this perennial clump-grass are very effective in September-October, turning gold late in the season. The plumes create winter interest when left on the plants.
* Use **Iris sibirica** 'Caesar's Brother' as a background for an annual flower bed. This dark blue Siberian iris is an excellent spring perennial, staying in flower for 2-3 weeks. Cut back flowers in early summer. The foliage clumps, 2-3' tall, are excellent throughout the season.
* **Paeonia lactiflora** and **Paeonia tenuifolia** are beautiful peonies. The first, **P. lactiflora**, is the traditional peony. It is effective as a single specimen, and can easily take the place of a shrub. Select single-flowered peonies, which do not require staking and do not flop over in a spring rain storm. It reaches 36-42" height, is available in reds, pinks and white. **P. tenuifolia** is the "Fern-leaf Peony," a much finer textured perennial than the other. It is available only in red. The 24" Fern-leaf Peony dies back by mid-summer; place it in the foreground of a shrub border for spectacular spring color, allow it to die back naturally.
* **Rudbeckia** 'Goldsturm,' **Achillea** 'Coronation Gold' and **Anemone hupehensis japonica** are outstanding perennials, useful on the golf course as single specimen plants in shrub borders. 'Goldsturm' flowers for 6-8 weeks in late summer. It is a 36-48" tall, clump-forming, somewhat spreading yellow coneflower.

  'Coronation Gold' is 36" tall, bright golden yellow, and very prolific in flowering. The gray-green fern-like leaves of this Yarrow form a 15" clump, and the flowers are held high above. It is very heat- and drought-tolerant.

  The Japanese Anemone forms a dark green, 24" mound, and flowers in late summer. The delicate-looking lavender, pink or white flowers are held above the leaves. It does best in semi-shaded areas, and is also very effective when planted in mass.
* **Hemerocallis**, or Daylilies, are highly adaptable, low-maintenance