

Innovative ideas control water run-off

WEST CHESTER — Given: acres of new roofs, new roads and parking lots. The rain water used to soak into the ground - now it runs off. How do you keep the increase in run-off from flooding out the neighbors downstream?

Great Valley Corporate Center (Rouse Associates) Route 29, Malvern, was faced with this assignment when they started construction activities in 1974. At the insistence of the East Whiteland Township Supervisors, they tackled the problem of increased run-off. They followed guidelines developed by the Chester County Conservation District. These were the first guidelines to be used in Pennsylvania.

The first approach was the construction of two large detention basins on the site. The basins were designed for both erosion/sediment and storm water control. The idea was to hold the increased run-off on site until the storm was over. Then release the stored water into the streams at a rate that the streams could handle without flooding and creating damage for downstream property.

Unforeseen problems developed. The original concept had been to store the water from a freak storm that might happen once in one hundred years. Then release it slowly. This large ponding of water on an area underlain with limestone, opened up sinkholes.

The basins also collected water from a large area. When released, the flow had to be controlled so that it did not exceed the previous flow at the point of outlet. Otherwise, the increased volume of water caused channeling and stream bank erosion.

The present solution is to have a metered release. The water is released from the property at the same rate - during the storm - (as near as possible) to that which existed under the original, natural conditions.

It was then recognized that the water, no longer percolating into the underground reservoir, could cause a drop in the underground water table. This in turn, could cause neighboring wells to go dry.

Another question then arose is it necessary to cause damage to neighboring property by depriving them of the use of the water from their well? There had to be an attempt at a solution.

One solution that Ted Kauffman, Project Engineer for the Corporate Center, considered was to install porous pavement, precast lattice blocks and/or leach fields. This would permit the rain water to soak in and recharge the underground water table. A difficult solution since these remedies could collect water which could cause more sink holes.

Kauffman found a partial

solution to recharging the underground water table by eliminating storm sewers. The run-off is carried by swales, grassed waterways and into the detention basins. Some water has a chance to soak into the ground naturally.

Surender Kohli of SWK Ltd. and Township Engineer for East Whiteland Township, has been involved with erosion/sediment and storm water management control since the early 70's. He recognized that the large acreage required planning and preparation so that sediment and increased run-off would not leave the site to damage neighbor's property.

East Whiteland Township requires and erosion/sediment and storm water control plan before construction starts. This is reviewed by Kohli. Concepts are considered, agreed upon and included in the plans. Kohli works with the builders to develop plans that will protect neighboring property owners yet be cost-effective.

Frequent inspections are made by Kohli or his staff during the construction period to make sure that no detail is overlooked. Some details may need to be changed as construction proceeds. These changes are worked out between Kauffman and Kohli.

Richard Laudenslager, Soil Scientist with the Department of Environmental Resources, made a surprise inspection of the Great Valley Corporate Center earlier this month. He was impressed with the attention to detail to protect neighboring property from siltation and increased run-off. He told Kauffman, "you are to be congratulated for the interest, effort and forethought that you have shown by putting in conservation techniques for the protection of neighboring and downstream property."

There were a few minor items that did not conform to D.E.R.'s Rules and Regulations. But, as Marshall Haws, Executive Conservationist with the Chester County Conservation District pointed out, "those Rules and Regulations were promulgated twelve years ago. These people have adopted innovative soil and water conservation practices that serve to protect the neighbors and the environment."

A number of townships in Chester County are having their Township Engineer review subdivision plans as well as to insure their implementation. The Conservation District supplies training programs and educational materials to municipalities, developers, engineers, as well as agricultural land owners in the County for the conservation of their precious soil and water.



Bales of hay, when properly installed, can protect neighboring property. Richard Laudenslager, left, Soil Scientist, Department of Environmental Resources and Ted Kaufman, Project Engineer for Great Valley Corporate Center, Malvern, compare notes on the proper installation of hay bale sediment control.



Ted Kaufman, Project Engineer, Great Valley Corporate Center, Malvern, points to a series of stone filter strips across a waterway that lead from a construction area to the sediment trap and detention basin. Any silt from the site is trapped behind the stone filters. After grass is established in the waterway, the filter strips will help retard the velocity of storm water entering the detention basin. Richard Laudenslager, Soils Scientist with the Department of Environmental Resources, gave the center credit for effective erosion/sediment controls designed to protect neighboring property.

136 soil types in Berks

LEESPORT — There are 136 different soil types in Berks County, states Duane Pysher, District Conservationist with the Leesport office of the U.S. Soil Conservation Service. In the continental U.S. there are over 70,000 different soil types.

For a farmer, developer, engineer, contractor, planner, gardener, sawmiller, or someone else who uses the soil or depends on it, the type of soil may have a big impact on how work is done. Each soil has certain physical properties such as soil depth, type of bedrock, flooding hazard, drainage, seasonal high water table, stoniness, erodibility, corrosiveness to metals and cement, and soil stability.

These soil physical properties occur in various combinations and they can be used to make interpretations for how the soil may affect different uses being made of it. This information is in the Soil Survey Report for Berks County and information contained therein

is available from the Soil Conservation Service.

Some predictions can be made about certain land uses such as how well a field crop or garden will yield on various types of soil, how much a tree may be expected to grow in 50 years, or whether a

house or building may have foundation problems.

Anyone wishing to know more about soil types for their property, may come to the Soil Conservation Service office, at the Agricultural Center in Bern Township.

Soviets agree to discuss grain

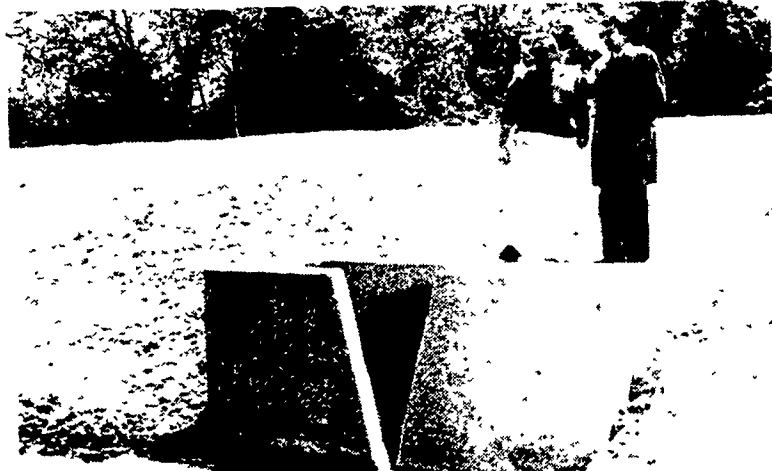
WASHINGTON, D.C. — Secretary of Agriculture John R. Block and U.S. Trade Representative William E. Brock have announced the Soviet Union has accepted a proposal by President Reagan to negotiate a new long-term grain agreement with the United States.

The current five-year agreement with the Soviet Union, beginning in October 1975, was extended for a sixth and seventh year. Under the terms of that agreement, the Soviet Union was required to purchase at least six million metric tons of U.S. wheat and corn annually. They could purchase up

to eight million metric tons without further consultations. That agreement expires this October.

"President Reagan has continued to reaffirm our intention to be a reliable supplier," Block said. "The Soviet Union's willingness to sit down and negotiate a new LTA is a strong indication that his message is being heard. We are getting the pieces put back together again."

The negotiations will be the responsibility of the U.S. trade representative in close coordination with the secretary of agriculture and the secretary of state.



Storm water from impervious surfaces can increase runoff from developed areas from two to three times what the runoff was under original, natural conditions. Richard Laudenslager, right, and Ted Kaufman examine an improved metering device for detention/retention basins. This design releases the flow downstream at about the same rate as under original/natural conditions. Flooding and streambank erosion are reduced.