

NEW NATURAL TURF SYSTEM AIDS PLAYERS
The PAT System - (Prescription Athletic Turf)

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Just turn on the suction pumps - if it rains during a game! Suck the raindrops down before mud forms! Give the palyers the firmness for running, resiliency for falling, and traction for turning. Give the coach, the players on the bench and spectators a better view by having a flat field. For base-ball - help the front office minimize rain check; keep drier base paths by suction. A new concept in athletic turf is now a reality!

Remember When?

Rain meant MUD! Because the extra water at the surface during rain (regardless of construction) would cause surface wetness - slippery playing conditions. It was true, crowning the field limited the size of puddles; that tile drains helped in springtime dry-out; and sandy soils are preferred over clay soils. BUT, in common, all are too wet at the surface when rain falls during the game. And, that's why the PAT System is NOT AN ADDITIVE - it is a REPLACEMENT! Now, the licensed architect can specify; the contractor can comply; the inspector can approve; then the field manager can manage!

The Idea and the Ideal

During December, 1970, the idea evolved, putting suction pumps onto drains - to pull raindrops down. We first tested a 10 sq. ft. area in the greenhouse, and later a 400 sq. ft. area outside. The vacuum developed (4-6" Hg.), rapidly stripped water and air through sandy subgrade and playing surfaces. In field tests (Goshen) excessive surface water (from hose) would be removed within 10 min.

Then, based on turf research and wide observations, a System evolved including -

<u>11 ITEMS</u> which	combined can make	<u>9 FEATURES</u>
Suction pumps		Suction pumping - as needed
Collector drains		Level fields - water moves
Sand		down
Plastic Sheeting		Water conservation - outflow
		control

Peat
Calcined aggregates
Slow release fertilizers
Soil heating cables
Vented plastic covers
Power rollers

Nutrient conservation - above plastic
Porous rootzone - ample air
Heat adding - keep soil thawed
Heat conservation-reduce frost action
Wear-resistant-increased growth
Subsurface watering - as needed

What PAT Does

- A. Gives Improved Playability
1. Gives firmness for running - vacuum assures
 2. Gives for falling - turf, peat, sand, aerify as needed
 3. Minimizes rain effect - just pump and forget
 4. Can adjust water while using - subsurface
 5. Encourages minimum cleat use - increases use potential
 6. Allows level field - the best view - uniform
- B. Counteracts the Very Wet
1. Assures rapid infiltration - textured firmness
 2. Allows internal storage - in sand
 3. Permits rapid adjustment - through slits in drains
 4. Provides ample aeration - in large pores
- C. Counteracts the Very Cold
1. Keeps soil thawed - safe footing
 2. Extends growing season - keeps roots above 40°F
 3. Reduces frost action - on leaves - improves color
 4. Reduces frost action - on soil surfaces
 5. Conserves soil heat - by vented plastic covers
 6. Traps sun's energy - under clear plastic
 7. Adds soil heat - by electric cables
 8. Permits warm season grasses to be used further north
- D. Counteracts the Very Hot
1. Favors evapotranspiration - from soil and turf - cools surface
 2. Conserves nutrients - in dilute solutions
 3. Requires minimum watering frequency
 4. Provides economy of water and labor
- E. Counteracts the Very Dry
1. Conserves rain water - as reserve above barrier
 2. Allows subsurface recharge - no wind effect
 3. Corrects for poor distribution
 4. Has "wick" action in 3 directions - either side and up

The first field at High School, Goshen, Indiana, was limited to the center 36,000 sq. ft. with one pump, and 14 - 16" rootzone above plastic. Kercher Landscaping contracted the work, and was aided by Larry Gadsen, Supt. of Facilities, and Rieth & Riley, general contractor. The construction took two months, and sod was laid two months prior to first home game. Cost estimate was 75¢ per sq. ft. for that area. Field had 26 uses, including football for High School - Junior High, as well as band practice - normal use for a community high school. Light overseeding before games, and light rolling after games was normal management. Even with 5" of rain within 48 hours prior to game, the field was ready for use.

The first full-size field, 62,000 sq. ft. with 2 pumps, was installed by Grand Valley State College, Allendale, Mich. Including extra excavation and extensive site work, their estimate is \$1.10 per sq. ft. It was first used in late season (Oct. 21) during an all-day rain - only the field itself stayed firm and ready for use.

Cost Estimates

It is estimated ready-for-use costs will range from 75¢ to \$1.50 per sq. ft., depending on location, delivered sand costs, overhead, etc. Although the question of "How much cost?" is always important, the BIG questions are - "How well can it be constructed," and "What level of turf maintenance can be developed to assure good, healthy turf?"