

10 MORE THINGS YOU SHOULD BE DOING WITH YOUR DISTRICT FACILITIES



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I. ATHLETIC FACILITIES – REMEMBER REAL TURF??

- G-Max Testing is great for Artificial Turf; but what methods can be used to test & verify the real stuff?

| Class ¹ | 25 May | 20 Jul | 13 Sep | 16 Sep | 29 Sep | 5 Oct | 14 Oct | 21 Oct | 28 Oct | 2 Jul |
|-------------------------------|--------|--------|--------|--------|--------|-------|--------|--------|--------|-------|
| Wear ² | 50.4 | 70.1 | 74.8 | 68.4 | 84.1 | 70.3 | 85.6 | 79.3 | 55.3 | 61.0 |
| Surface hardness ³ | 59.4 | 55.5 | 66.9 | 66.2 | 67.4 | 59.3 | 67.9 | 69.7 | 53.7 | 54.9 |

¹ May testing performed after wear simulating 28 games. 20 Jul testing performed after wear simulating 96 games. Aeration of wear soil to wear areas occurred on 6 Aug 2014. The area as aerated with 0.75" hollow tines. ² Sep testing performed after wear simulating 8 games after aeration. 13 Sep testing performed after wear simulating 20 games after aeration. 29 Sep testing performed after wear simulating 28 games after aeration. 5 Oct testing performed after wear simulating 64 games after aeration. 14 Oct testing performed after wear simulating 80 games after aeration. 28 Oct testing performed after 96 games after aeration.

³ Plates receiving wear treatments were exposed to wear as eight passes three times per week with a Britex Traffic simulator beginning on 21 Apr and ending on 8 Nov. Surface hardness was measured according to ASTM standard F355. 2 Jul testing performed for wear simulating 96 games.



| Surface | Hammer 2-25 kg Gmax |
|--|---------------------|
| High school fields | 33-167 |
| Frozen practice field | 303 |
| Filed, concrete basement floor | 1,280 |
| Carpet and pad on tiled concrete floor | 190 |
| Carpet and pad on hardwood floor | 134 |
| Gmax = maximum deceleration | |

- Natural Turf generally not as uniform as Artificial, therefore different procedures are used.
- Test is done with a "Clegg Hammer" Same as G-Max but uses a more flexible procedure for choosing testing locations.
- Need sufficient sample size to get representative results.
 - Divide the field into 15' x 15' grids and randomly select 5-15 locations. make sure they are representative of various use/wear areas
- Take four reading at each location within 1 square yard of the mark and average results.

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2. SITE – GO NATIVE!

- Native Plants Offer an Array of Benefits for School District Facilities and Grounds.

- Low Maintenance: they grow well together, have predictable sizing, low/no watering, low/no fertilizer, low/no pesticides → COST SAVINGS!!!
- Public Health: Ever check what was in your commercially purchased mulch or bedding? How about exhaust from maintenance equipment?
- Provides food and shelter for wildlife and pollinators as well as promoting biodiversity.
- Bring color back to your school! Purple Coneflower, Black-eyed Susan, Joe Pye Weed, Spiderwort, Blazing Star, Cardinal Flower, etc, etc.

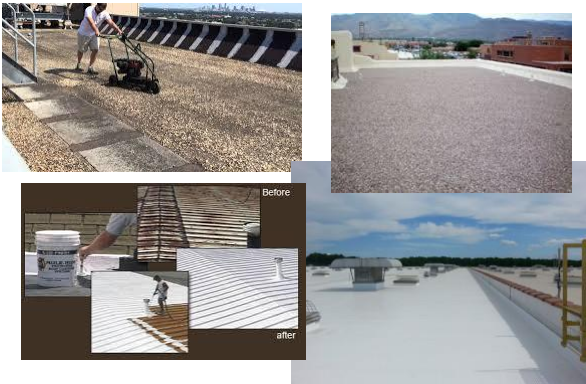


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3. ROOFING – DON'T PEEL & REPLACE

- ...Recoat your roof for a 10 year warrantee extension!



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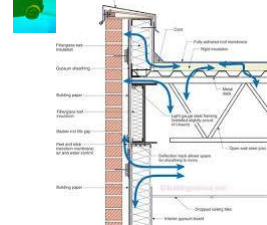
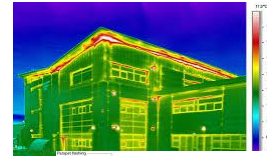
- Recoating can provide better waterproofing, better UV resistance, better reflectivity (energy savings) and an extended life!
- Problem areas may have to be addressed with a full depth replacement. All flashings, transitions, seams, and penetrations need to be verified and/or repaired.
- Recoating uses less material and less labor, saving time, costs and money.
- Beware of recoat warranties offering more than 10 Years unless provided by the original manufacturer.

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4. BUILDING ENVELOPE – AND YOU THOUGHT AIR WAS FREE...

- 29% of energy consumption in school buildings can be attributed to Air Leakage!
 - Potential energy savings for CZ 5 & 6 (PA) can be 12-18% by controlling Air infiltration.
 - Air leakage is the single largest source of wasted energy and IAQ problems within the building system.
 - Leads to condensation, moisture, mildew, mold, animals, insects dust, odors, pollen, etc. etc.
 - Testing is inexpensive and easy using a simple building envelope assessment and FLIR camera.
 - Divide and Conquer by sealing these locations: Top, Bottom, Vertical Shafts, Outside walls, Compartments.



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5. ENERGY – DON'T LET YOUR SYSTEM VACATION THIS SUMMER!

- Mold remediation costs can far exceed energy savings from deactivating HVAC systems in the summer.

| | Costs | | Energy Impact | |
|---|---------|-------------|---------------|------|
| | Capital | Maintenance | Savings | Cost |
| <i>Problem: HVAC systems off in summer mode</i> | | | | |
| a) Run HVAC system on normal schedule | 0 | 1 | – | 3 |
| b) Run HVAC system short duration each day | 0 | 1 | – | 2 |
| c) Install dehumidifiers in problem areas | 0 | 2 | – | 1 |
| <i>Problem: Excessive outside air introduced by HVAC system</i> | | | | |
| a) Reduce HVAC in unoccupied rooms to brief cycle each day | 0 | 1 | 2 | – |
| b) Run fans at low speed when HVAC system is activated | 0 | 0 | 1 | – |
| c) Correct minimum damper position | 0 | 1 | 1 | – |
| d) Correct sequence of operation | 0 | 1 | 1 | – |
| e) Disable exhaust and outside air intake during summer mode | 1 | 0 | 2 | – |
| f) Install motion sensors/controls to disable outside air intake when area unoccupied | 1 | 1 | 3 | – |
| g) Install DDC controls sequence for summer low occupancy | 2 | 0 | 2 | – |
| <i>Problem: Extreme over-cooling due to control system failure</i> | | | | |
| a) Restore normal operations | 1 | 0 | 3 | – |
| b) Calibrate thermostats | 0 | 2 | 1 | – |
| <i>Problem: Outdoor infiltration due to negative building pressure</i> | | | | |
| a) Deactivate unnecessary exhaust fans and increase outside air | 0 | 1 | 1 | – |
| b) Seal exterior wall openings | 1 | 0 | 1 | – |
| c) Ensure outside air dampers close when fans are off | 1 | 0 | 1 | – |
| d) Re-balance the system | 3 | 0 | +/- | +/- |

- ASHRAE 2009 states that surface humidity must be kept below 80% over a 30 day period to prevent mold growth
- Most common summer issues contributing to mold growth:
 - No HVAC means no dehumidification
 - Outside Air Dampers remain open or negative pressure because exhaust air exceeds supplied outside air.
 - UV valves remain open circulating cool water or Overcooling
 - Ongoing Leaks from roofs, plumbing, etc. adds moisture
 - Equipment malfunctions or incorrect schedules in system.

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6. INTERIORS – NOW WHERE DID I LEAVE THAT THING??

- Simply knowing where things are can keep a small issue from becoming an expensive disaster!
 - Mark valve and equipment locations with color coded indicators on ceiling grids – NOT tiles.
 - Make sure all equipment rooms contain up to date valve charts, and valve labeling corresponds with it.
 - Make sure pipes are labeled with use, color and direction of flow where possible.
 - Electrical outlets and lighting should be labeled with panel and breaker numbers, even use if possible.
 - Data outlets and cords can be coded for IDF and connection location, use and type



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7. PLUMBING – WATER TO WHINE...

- Don't wait for the "bad taste in your mouth" before eliminating this issue!



- Dead ends or dead legs in plumbing systems can lead to microbial growth including legionella and other serious issues such as:
 - Discoloration
 - Premature pipe decay
 - Bad taste and smell
- Easiest and quickest fix is to add a valve fixture or recirc loop to allow water use and/or movement.

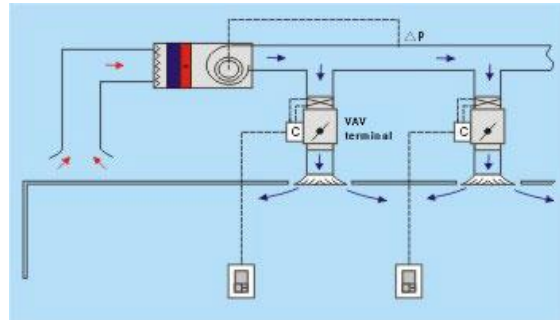
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8. HVAC – LOCAL CONTROL MEANS HAPPIER STAFF!

- Variable Air Volume (VAV) Systems hold many benefits for schools aside from saving energy.
 - Easily retrofit into schools with existing central plants.
 - Provide individual room control for maximum comfort.
 - Units can be installed remotely to keep noise in classrooms down.
 - Ducted units provide optimum air distribution.



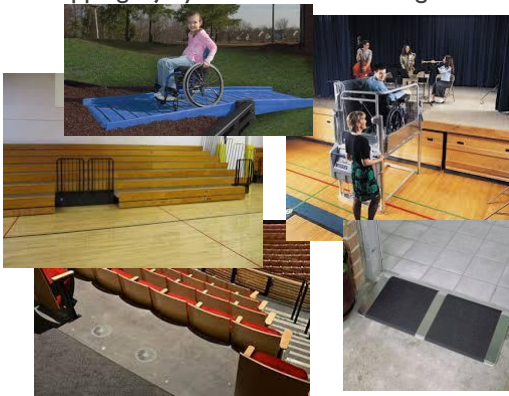
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9. ACCESSIBILITY – HAVE A NICE TRIP...SEE YOU NEXT COURT DATE.

- A tripping injury can cost a school big dollars if accessibility issues aren't regularly inspected and addressed!



- Regular inspections of all assembly areas such as auditoriums, indoor bleachers and outdoor grandstands should be a part of all school PM programs.
- Many accommodations are easy and inexpensive to achieve, including but not limited to:
 - Adding accessible/HC seating areas
 - Making sure rails and openings meet max 4" standard
 - Adding rails or guards where missing or damaged
 - Providing ramp access where existing conditions allow.

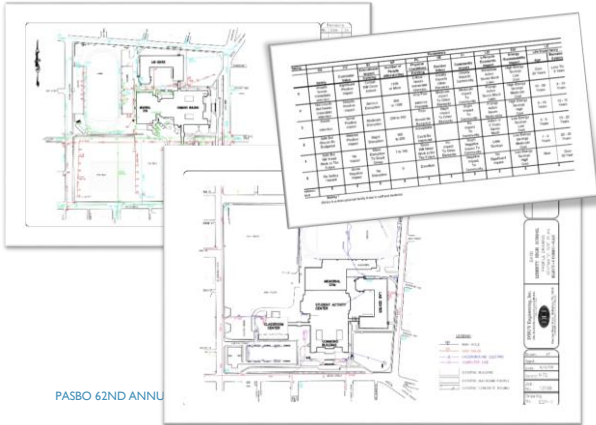
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10. DISTRICT-WIDE CAPITAL PLANNING – ENOUGH SAID!

- Every district has a plan looking at the next 5-10 years for spending and improvements...Right??...Right??



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- At a minimum every plan should include:
 - Facilities Conditions Assessment.
 - Facilities Profiles.
 - Enrollment and Capacity Planning.
- Every potential issue in all facilities should be cataloged, costed and objectively prioritized.
- Each facility should be evaluated based on needs and scored using potential renovation and new construction costs
- Facility needs should be scheduled into a holistic 5-10 yr plan to guide expenditures where most needed.

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