

CONTROLLING THE BREEZE

OR "KEEPING THE AIR SAFE"

BY LARRY SCHWARTZ, SAFESTART ENVIRONMENTAL
COPYRIGHT SEPTEMBER 2022

1

DISCLOSURES

- NONE

2

“CLOSE THE DOORS, THEY ARE COMING IN THE WINDOWS”

AIR IN SOILS HAS MICROBIAL GROWTH AS SOILS ARE 25% MICROBIALS FROM DEAD AND DECAYING ORGANIC MATERIALS

PLOWED FARM FIELDS

GROWTH ON TREES AND FOILAGE

PONDS, LAKES, CREEKS, ETC – ALGAE

GOLF COURSE – CHEMICALS

INDUSTRY - POLLUTANTS

3

WHY HOMES “SUCK”

WE RUN BATH AND KITCHEN FANS

WE RUN CLOTHES DRYERS

STACK EFFECT – RISING WARM AIR PUSHING AIR OUT

THE HOME HAS TO REPLACE THE AIR BEING PUSHED OUT AND THEREFORE SUCKS AIR IN THROUGH PATHS OF LEAST RESISTANCE

4

AIR COMES BACK INTO INTO THE HOME FROM

- ABOVE AND BELOW GROUND
- AROUND WINDOW AND DOOR FRAMES
- WHEN WE COME AND GO AND OPEN WINDOWS
- WALL SWITCH PLATES AND ELECTRICAL OUTLETS
- CRACKS AND COLD JOINTS, ETC.

5

TYPES OF AIR MOVEMENT IN A HOME

- CONVECTION CURRENTS IN ROOMS BY RISING WARM AIR
- FORCED AIR MOVEMENT FROM HVAC SYSTEMS
- OPEN WINDOWS
- STYLE OF HOME AND LAYOUTS OF DIFFERENT LEVELS
- NUMEROUS AIR HANDLERS AND WHAT AREAS THEY SERVICE
- CONVECTION OFF OF RADIATORS

6

TYPES OF POWER VENTILATION SYSTEMS

- ENERGY RECOVERY VENTILATION (ERV) USED IN MORE HUMID CLIMATES
- HEAT RECOVERY VENTILATION SYSTEMS (HRV) USED MORE DRY CLIMATES
- "ULTRA-AIRE" SYSTEM SANTA FE DEHUMIDIFIERS MORE WHOLE HOUSE DEHUMIDIFICATION AND VENTILATION TO A LESSER DEGREE. OFTEN IN TROPICAL AND VERY HIGH HUMIDITY AREAS

7

USUAL INSTALLATION BY HVAC CONTRACTORS

- THE VENTILATION DEVICE IS MOUNTED CLOSE TO THE AIR HANDLER
- INCOMING AIR COMES IN THROUGH A PVC PIPE THAT GOES OUTSIDE **JUST ABOVE THE SOILS**
- THEY RELY ON THE FILTER THAT COMES **INSIDE THE VENTILATION DEVICE**
- EXHAUST AIR COMES OUT **CLOSE TO THE INTAKE AIR**
- THERE IS USUALLY **NO AIR PRESSURE BALANCING BETWEEN FLOORS, FOUNDATIONS AND THE OUTDOORS**

8

NEW "MUSTS" OF INSTALLATION

- THERE ARE RECOMMENDED SIDES OF THE HOME TO BRING IN FRESH AIR FROM IF POSSIBLE
- THE HEIGHT ABOVE GROUND AND PRE FILTERING OF THE INTAKE AIR IS CRITICAL
- THE LEVEL OF PRE FILTERING THE INCOMING AIR IS ESSENTIAL
- THE FINE TUNING OF THE EXHAUST AIR RATE IS CRITICAL
- EACH HOME IS UNIQUE IN HOW THIS IS PERFORMED

9

CONTINUED

- SPECIFIC FEATURES OF THE VENTILATION DEVICE NEED TO BE SPECIFIED
- IN SOME CASES WE RECOMMEND ADDING A WHOLE HOUSE DEHUMIDIFIER IF NEEDED
- IN MOST ALL CASES WE HAVE SPECIFIC RECOMMENDATIONS OF MAKE AND MODELS OF SYSTEM AIR PURIFICATION TO BE INSTALLED UNIQUE FOR EACH PROPERTY
- WE DO NOT WANT TO HAVE ANY DEVICE THAT CREATES OZONE!

10

RANGES OF COSTS

- IN OVER 60 INSTALLATIONS, WE HAVE CREATED PROTOCOLS IN ALL AREAS OF THE UNITED STATES, WORKING WITH LOCAL HVAC CONTRACTORS AND OUR HVAC SPECIALISTS, THERE ARE MANY VARIABLES EFFECTING COSTS, SUCH AS:
 - LOCATIONS AND HOW MANY HVAC AIR HANDLERS ARE THERE?
 - PROXIMTY OF THE AIR HANDLERS TO EXTERIOR WALLS AND WHICH WALLS
 - AMOUNT OF SPACE IN THE AREA OF THE AIR HANDLER AND SPACE ABOVE/BELOW
 - TYPES OF DUCTWORK, ETC.

11

CONTINUED

- COSTS PER SYSTEM INCLUDING PARTS, FITTINGS, LABOR, ETC. HAVE VARIED FROM \$4000-\$5000 AND ALSO UP TO \$10,000
- STILL A LOT LESS THAN A FULL SMALL PARTICLE CLEANING, ETC

12

WHAT ABOUT NON FORCED AIR HVAC SYSTEM HOMES?

- WE HAVE WORKED WITH HVAC CONTRACTORS IN MANY AREAS WITH THIS SITUATION
- THERE WILL BE SOME ADDITIONAL COSTS TO CREATE A SUPPLY AND RETURN PLENUM ON ONE OR MORE LEVELS IN THE HOME TO DISTRIBUTE AND EXHAUST THE AIR
- **IT CAN BE DONE!**

13

STEPS NEEDED FOR MAXIMUM IAQ

- FIND AND CORRECT ACTIVE CAUSES OF THE BAD STUFF- THE USUAL PAST AND CURRENT WATER DAMAGE ISSUES(REMEDIATION) + BAD OUTDOOR STUFF
- DETERMINE WHAT DEGREE OF LOAD OF BAD STUFF REMAINS (OBSERVATIONS AND UNIQUE INTERPRETATIONS OF LABS AND SITE INVESTIGATION RESULTS). IF A LIGHT TO MODERATE LOAD, THEN A LIGHT DEGREE OF CLEANING PLUS VENTILATION+AIR PURIFICATION MAY SOLVE THE PROBLEM

14

EVERY CASE IS UNIQUE AND NEEDS INVESTIGATION AND
RESOLUTION BY A QUALIFIED MEDICALLY SOUND IEP

15

SAFESTART ENVIRONMENTAL
847 913 9200

- WEBSITE: SAFESTARTIAQ.COM

16