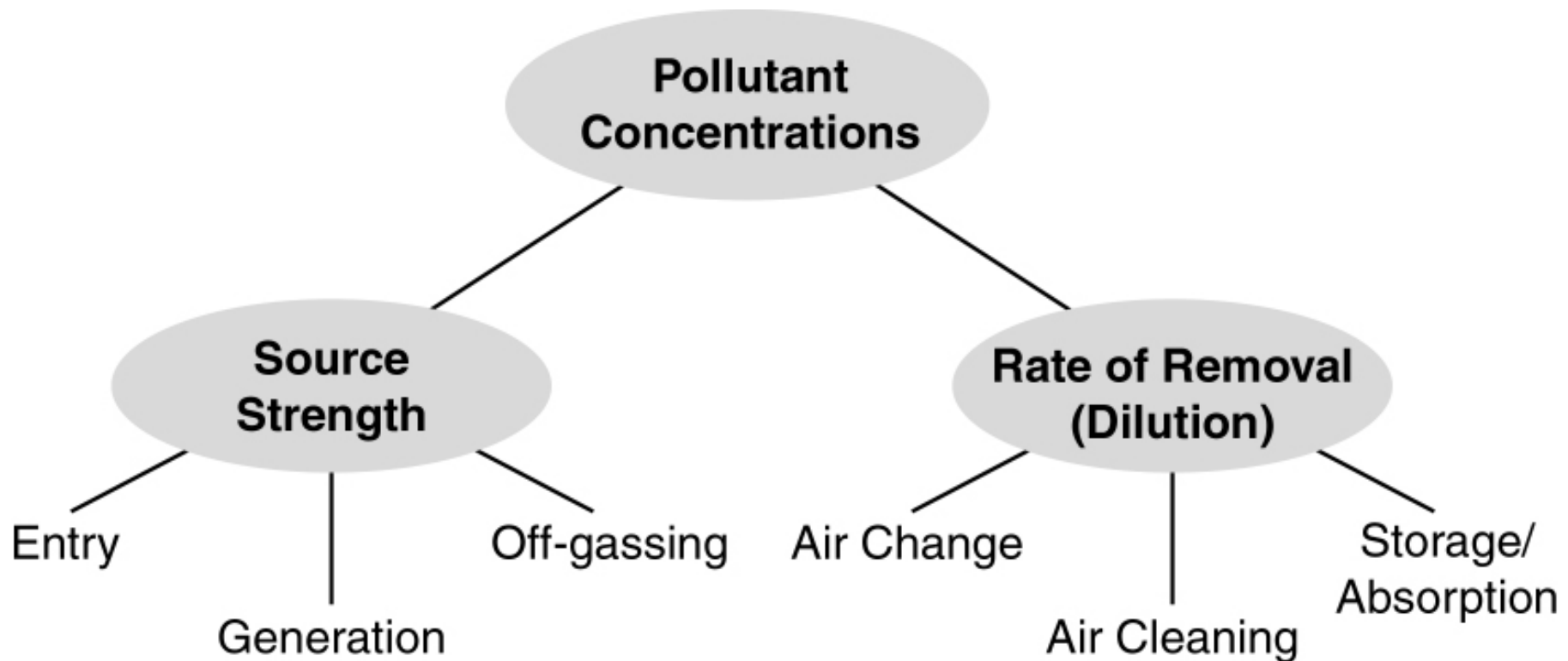


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Building Science

Airflow In Buildings III

presented by www.buildingscience.com





Go With the Odds

50 percent of problems involve lack of air

25 percent of problems involve
negative/positive pressures

15 percent of problems involve cleaning

10 percent of problems involve “other”

Don't Do Stupid Things



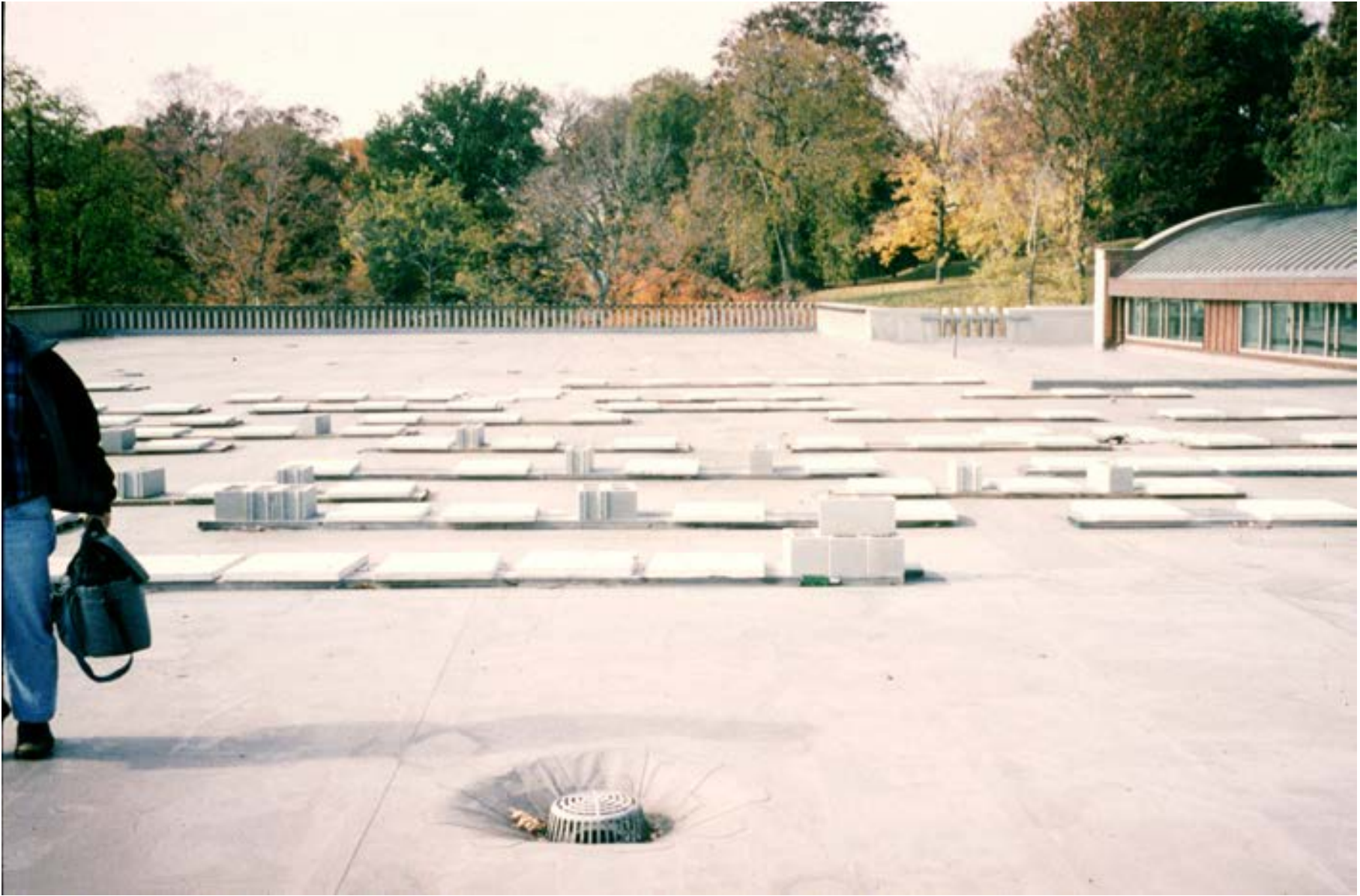






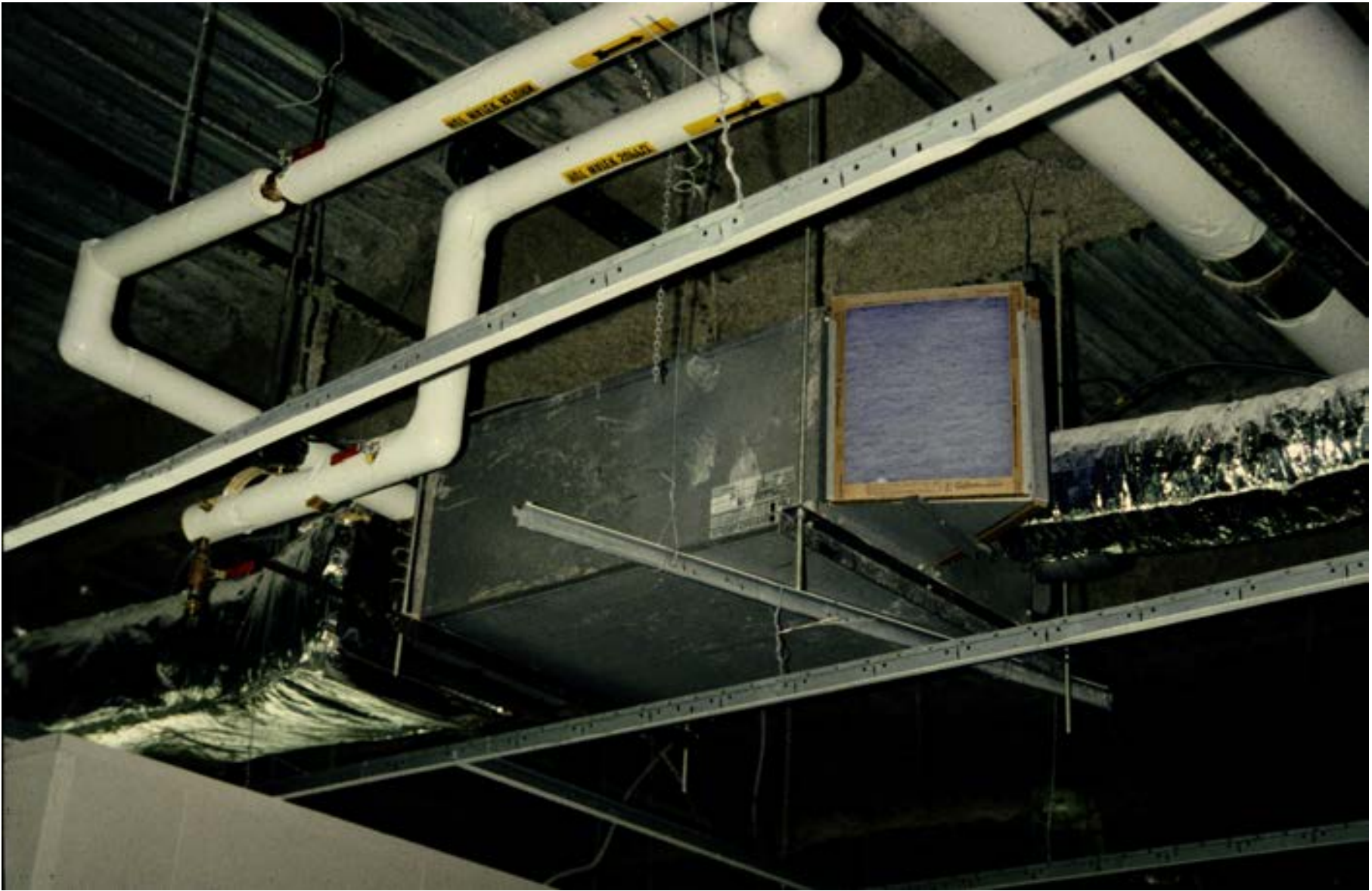




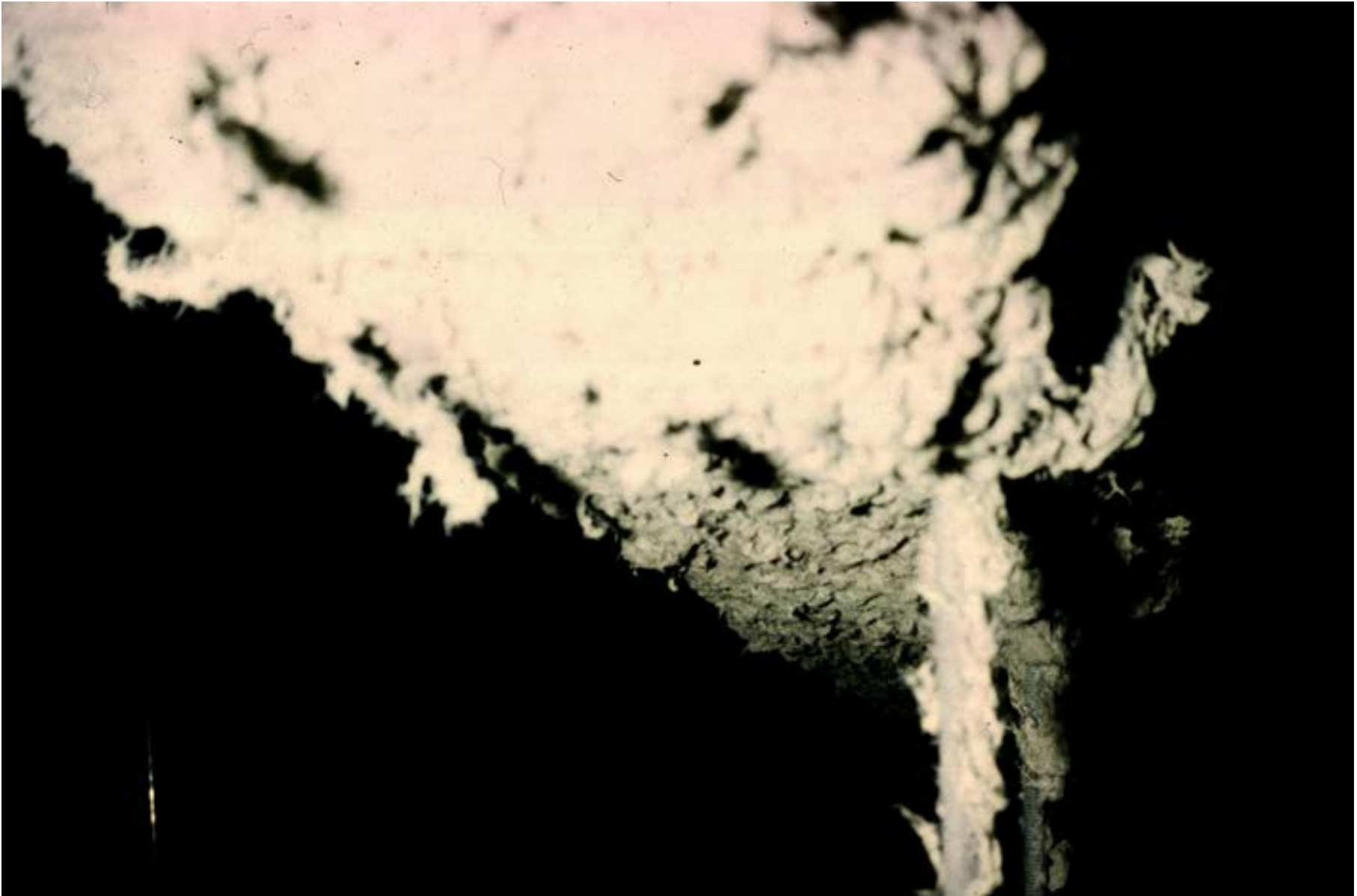
















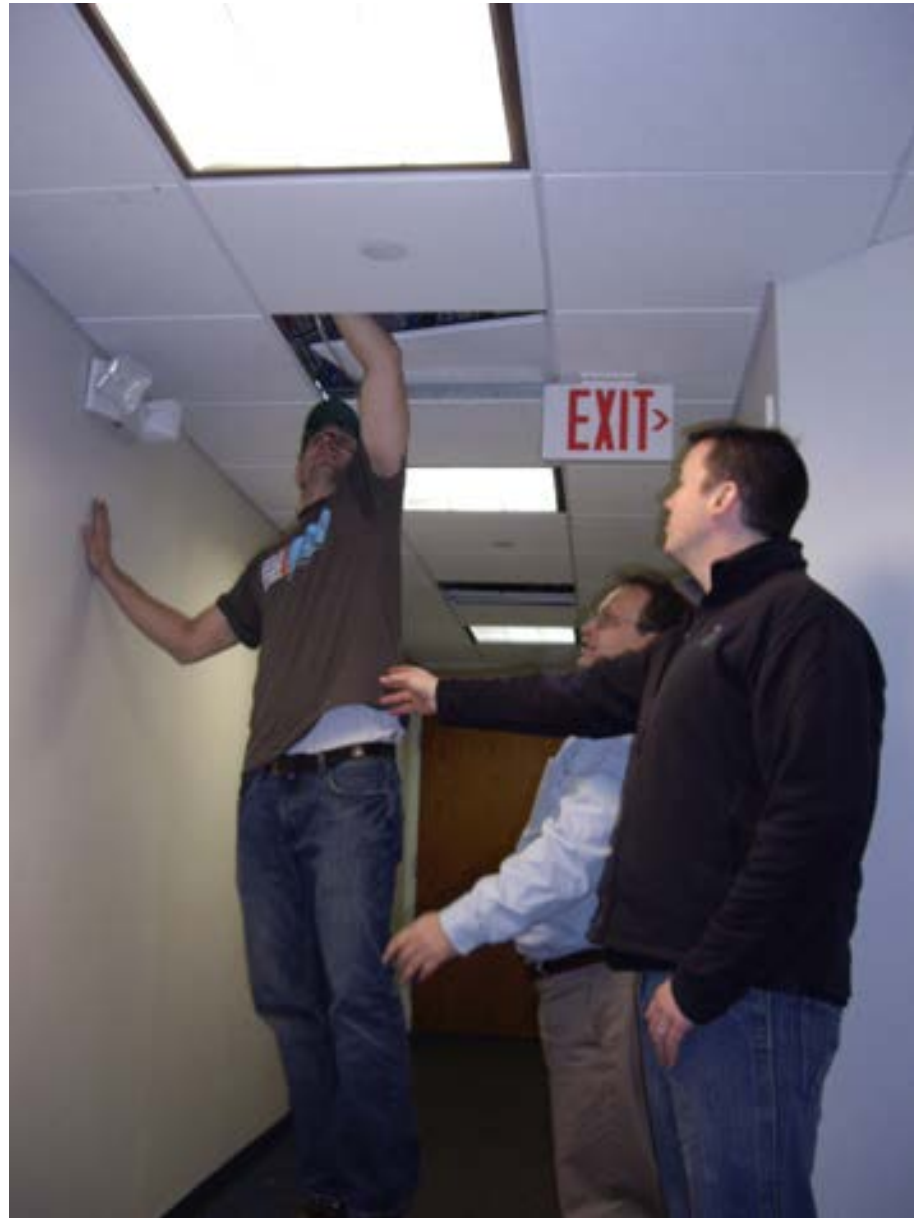














Definition of a Problem

People

Pollutant (hot, wet, UV, ozone)

Path

Pressure











Pollutants

Principle Damage Functions

Heat

Water

Ultra-Violet Radiation

Ozone

If You Want To Find The Pollutant Source
Look For the Hot Spot or the Wet Spot or the
Spot That Sees Ultra-Violet Light or the Spot That is Sensitive to Ozone

Damage Functions are Exponential and Synergistic

Arrhenius Equation of Free Energy: Every 10 degree Kelvin rise in temperature yields a doubling of the reaction rate

Heat: every 10 degree K or 18 degree F results in a 50 percent reduction in the useful service life of a material

Water: every 18 percent increase in relative humidity results in a doubling of the vapor pressure and a 50 percent reduction in the useful service life of a material

Ultra-Violet Radiation: every 10 percent increase in intensity results in a 50 percent reduction in the useful service life of a material

Ozone: every 10 percent increase in intensity results in a 50 percent reduction in the useful service life of a material

If You Want Things To Last A Long Time:

Keep Them Cold

Keep Them Dry

Keep Them Out of The Sunlight

And Don't Expose Them To Ozone

The Principle Damage Functions Result in the Breakdown of Materials

Breakdown Products are Often Gaseous and Particulate

They are Typically Transported by Air





