Tips, Tricks, and All the Other Things You Never Knew RED Could Do

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Presenter

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PIEDMONT TRIAD
REGIONAL COUNCIL

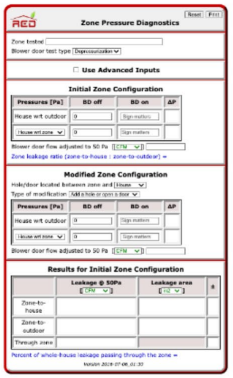
RED Calc

Free Building Science Calculators for Residential Energy Efficiency Professionals

The Weatherization Assistance Program (WAP) and the Building Technologies Office (BTO) of the Department of Energy (DOE) have collaborated to purchase the **RED Calc Free** and **RED Calc Pro** web app software tools. The entire suite of tools is now free for all to use.

Tool Categories:

Ventilation Sizing | Airflow Measurement | Insulation | Domestic Hot Water | Moisture | Electrical Use | Weather Data

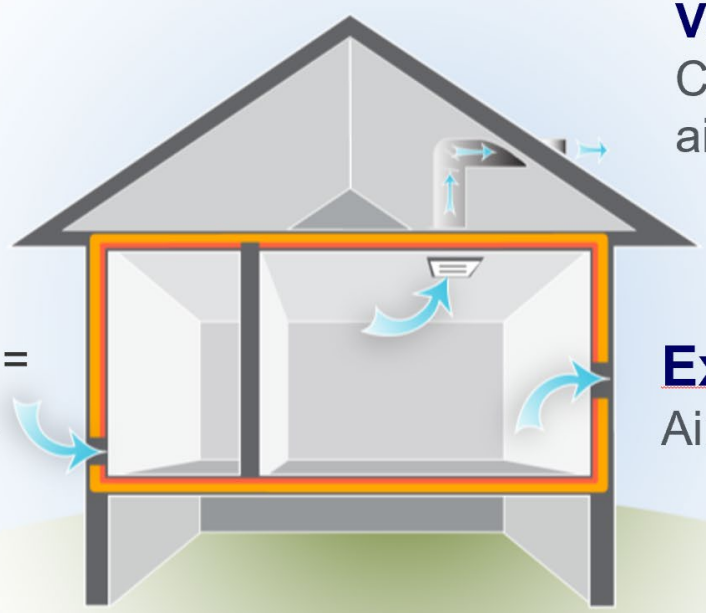


https://basc.pnnl.gov/redcalc

Passive Ventilation: uses natural pressure differences across a building's pressure boundary

Mechanical Ventilation: uses a mechanical fan to move air in or out across a building's pressure boundary

Ventilation =
Controlled
air leakage.



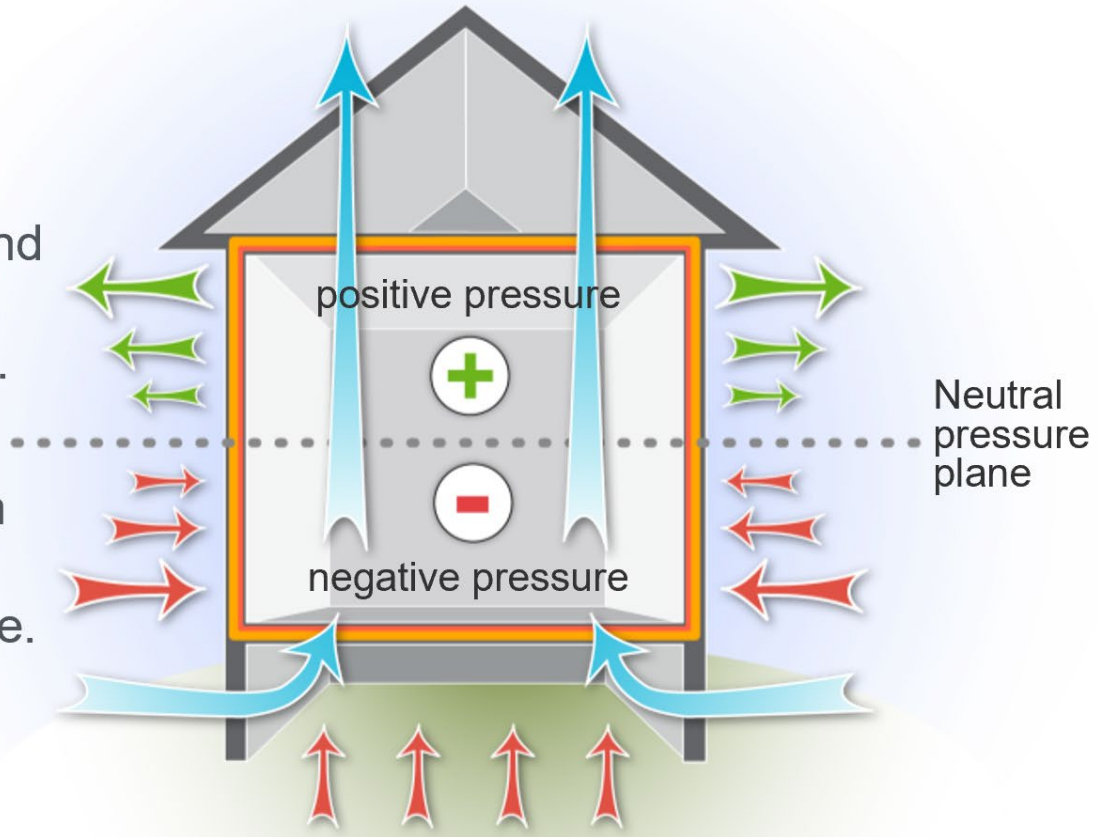
Infiltration =
Air leaking in.

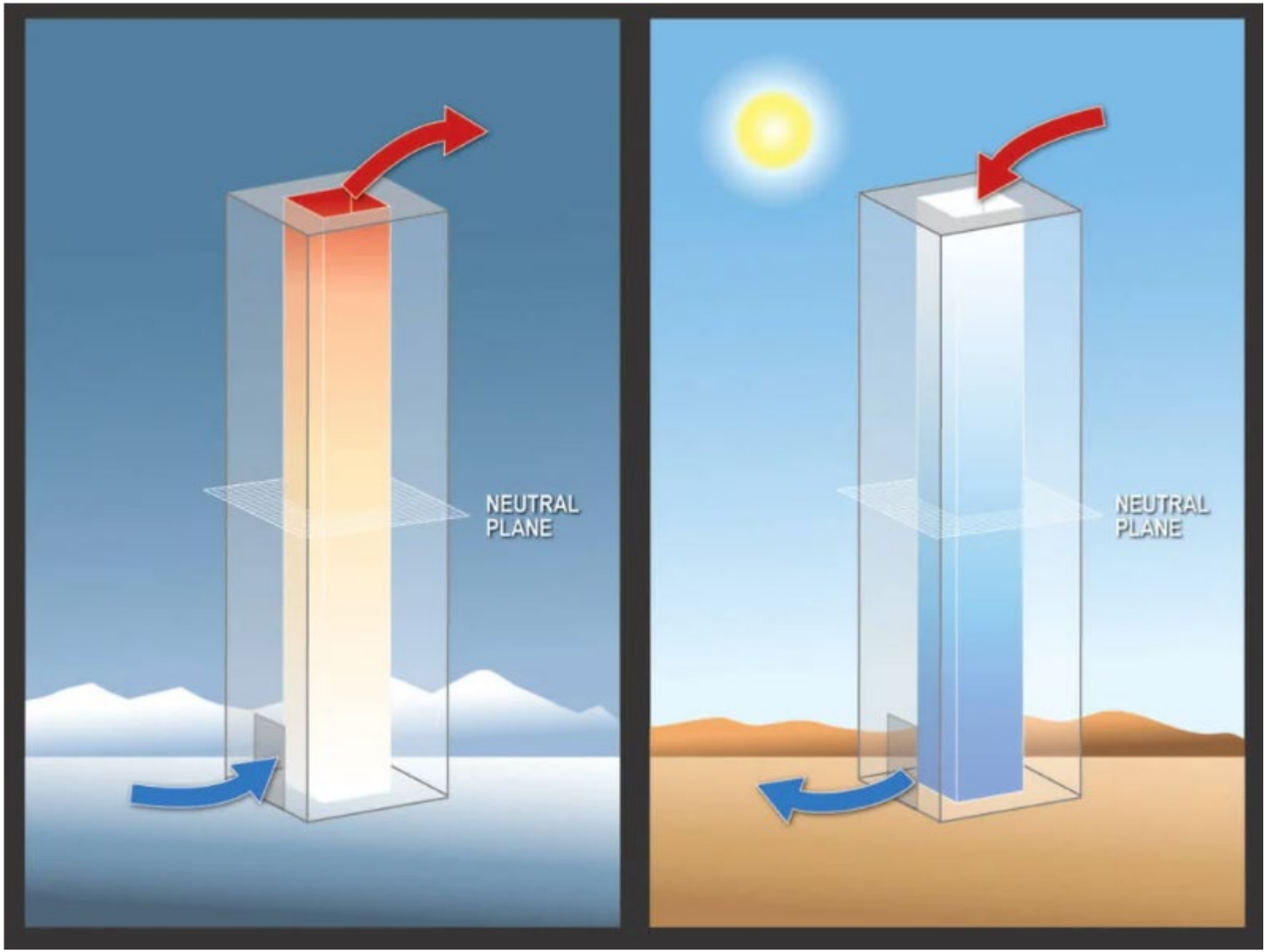
Exfiltration =
Air leaking out.

Stack Effect

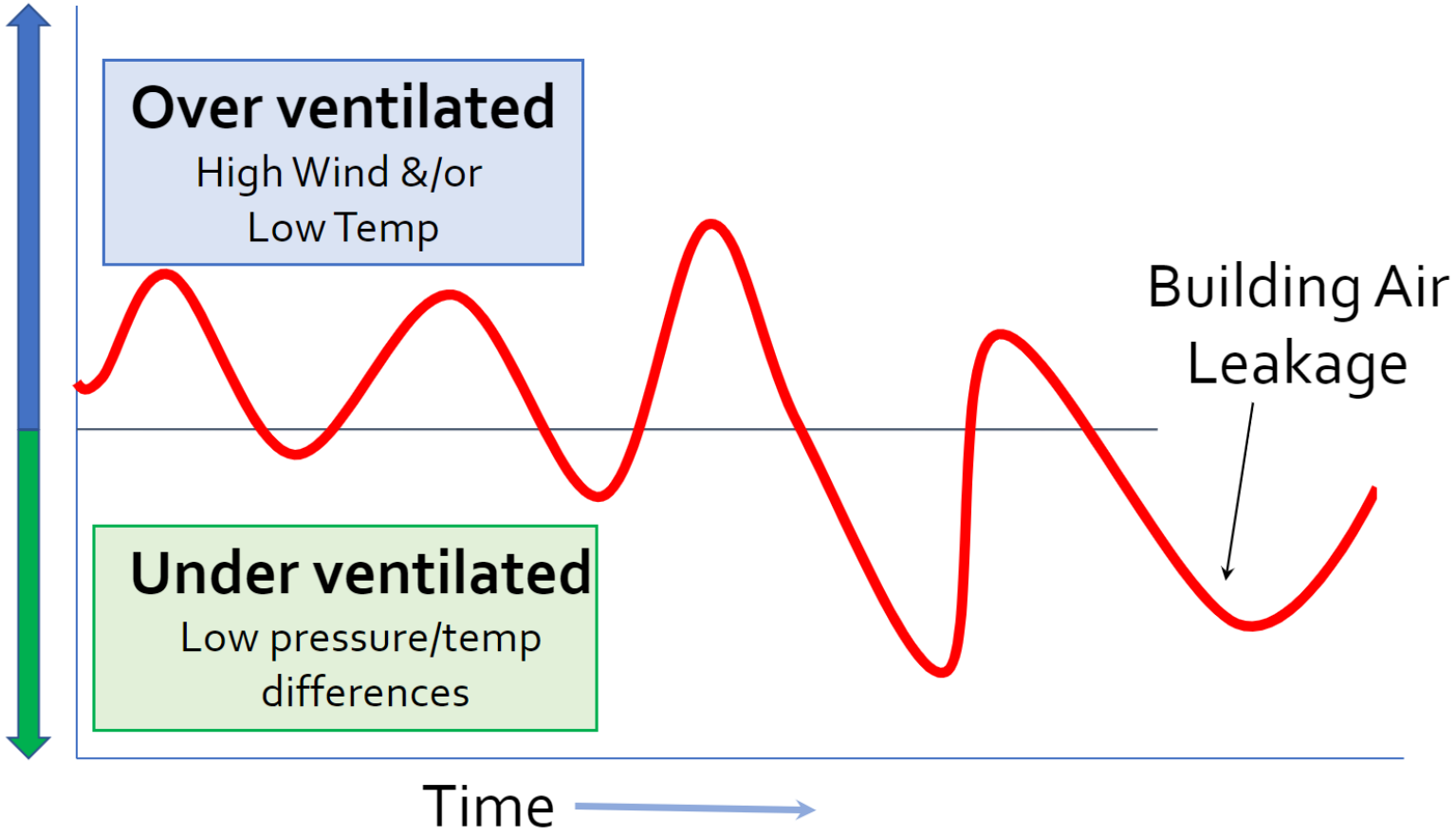
Warmer air rises and escapes out of the top of the house. . .

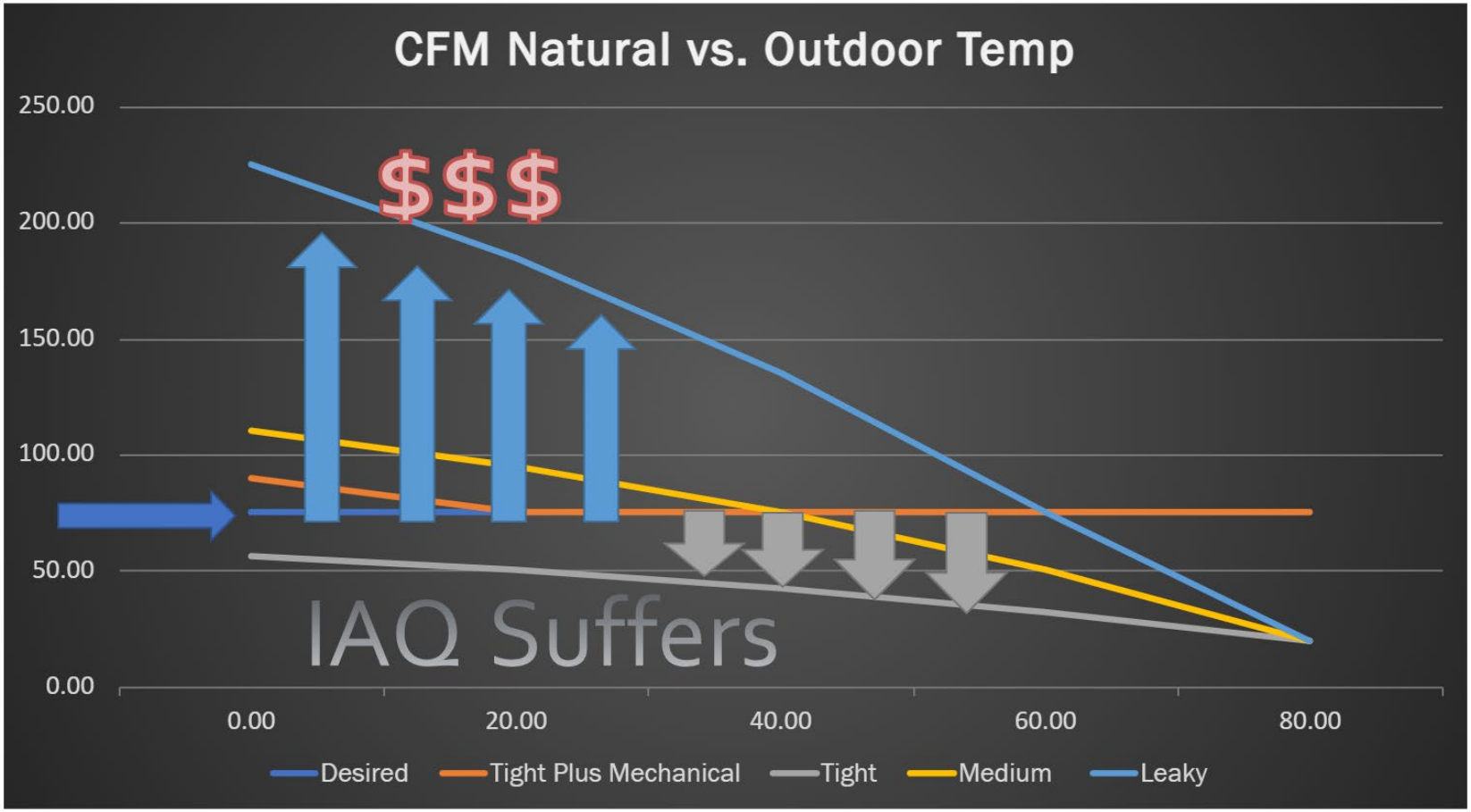
Which creates a suction that pulls in outside air at the bottom of the house.




NEUTRAL
PLANE
NEUTRAL
PLANE

Passive Ventilation is Uncontrollable & Unreliable




CFM Natural vs. Outdoor Temp
250.00
200.00
150.00
100.00
50.00
0.00
$$$
IAQ Suffers
0.00
20.00
40.00
60.00
80.00
Desired
Tight Plus Mechanical
Tight
Medium
Leaky


Questions?

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