













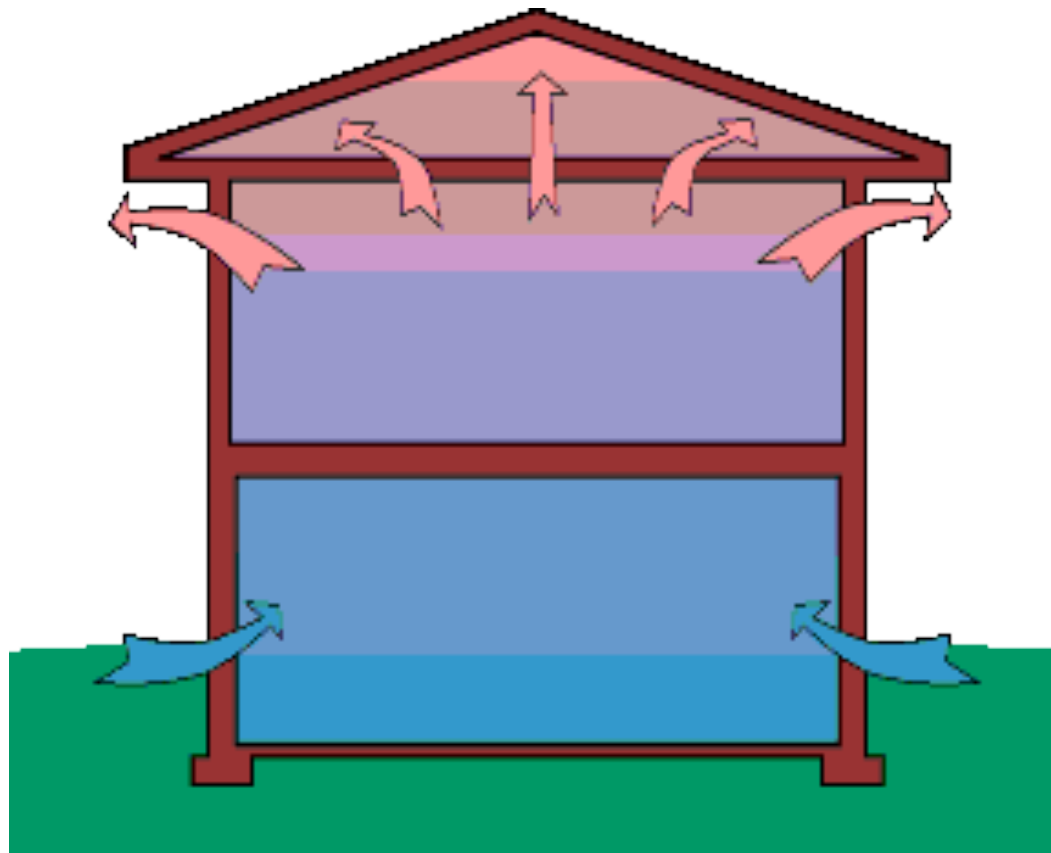


NO
STANDING
←

Ⓟ
→

STOP
HERE
↙ ON
RED
SIGNAL

Stack Effect



















Failed component

Fix

or

Replace

or

Forget

Each strategy has
initial, ongoing and residual costs

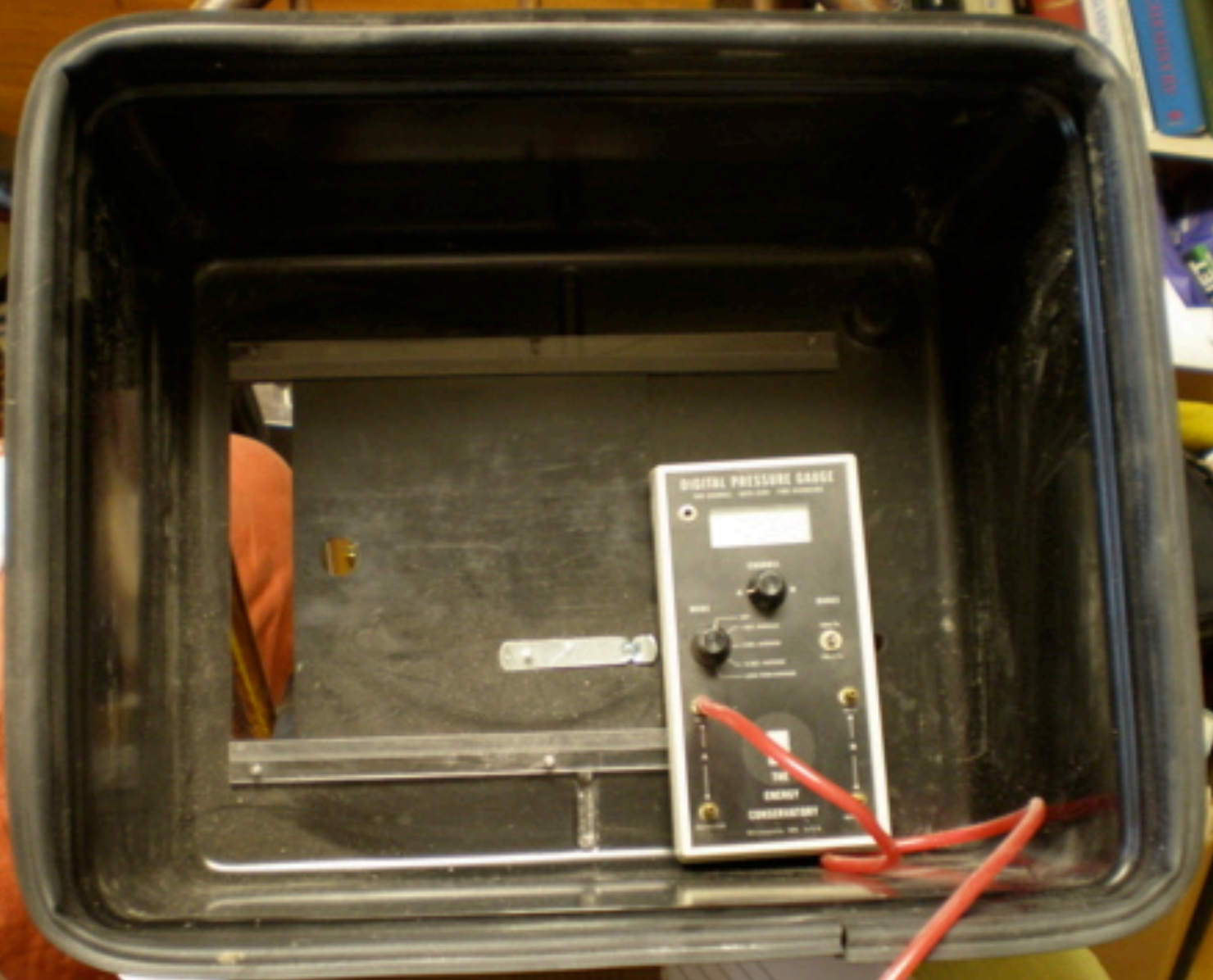
Poor Maintenance can create The Perfect Storm

What is the service life?

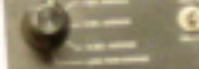
Can one get at it?

Can it be repaired?

What are the consequences of failure?



DIGITAL PRESSURE GAUGE



THE ENERGY CONSERVATORY

MANUFACTURED BY THE ENERGY CONSERVATORY

Meter Pressure (Pa)	Flow (CFM)		
	E1	E2	E3
0.6	34	16	8
0.8	39	19	9
1.0	44	21	10
1.2	48	23	11
1.4	52	25	12
1.6	55	26	13
1.8	59	28	14
2.0	62	29	14
2.2	65	31	15
2.4	68	32	16
2.6	71	33	16
2.8	73	35	17
3.0	76	36	17
3.2	78	37	18
3.4	81	38	19
3.6	83	39	19
3.8	85	40	20
4.0	87	41	20
4.2	90	42	21

Meter Pressure (Pa)	Flow (CFM)		
	E1	E2	E3
4.4	92	43	21
4.6	94	44	22
4.8	96	45	22
5.0	98	46	23
5.2	100	47	23
5.4	102	48	23
5.6	103	49	24
5.8	105	50	24
6.0	107	51	25
6.2	109	52	25
6.4	111	52	25
6.6	112	53	26
6.8	114	54	26
7.0	116	55	27
7.2	117	56	27
7.4	119	56	27
7.6	121	57	28
7.8	122	58	28
8.0	124	59	28











KMH-150

NO. 200
T. 200
DATE: 10/14/08

MANUAL
OPERATION
INSTRUCTIONS
1. Turn the handle to the right to open the door.
2. The door will open to the right and the handle will stop at the end of the stroke.
3. To close the door, turn the handle to the left until it reaches the stop.
4. The door will close and the handle will stop at the beginning of the stroke.
5. The door will not open if the handle is not turned to the right.
6. The door will not close if the handle is not turned to the left.
7. The door will not open if the handle is not turned to the right.
8. The door will not close if the handle is not turned to the left.
9. The door will not open if the handle is not turned to the right.
10. The door will not close if the handle is not turned to the left.

MAINTENANCE ROUTING

To Report Damage
To the
1. Report the damage to the
2. Report the damage to the
3. Report the damage to the
4. Report the damage to the
5. Report the damage to the
6. Report the damage to the
7. Report the damage to the
8. Report the damage to the
9. Report the damage to the
10. Report the damage to the

WARNING

1. Do not touch the door or handle when the door is open.
2. Do not touch the door or handle when the door is closed.
3. Do not touch the door or handle when the door is moving.
4. Do not touch the door or handle when the door is stopping.
5. Do not touch the door or handle when the door is starting.

Clear the Door

1. Clear the door of any debris.
2. Clear the door of any obstructions.
3. Clear the door of any dirt.
4. Clear the door of any grease.
5. Clear the door of any oil.
6. Clear the door of any water.
7. Clear the door of any snow.
8. Clear the door of any ice.
9. Clear the door of any frost.
10. Clear the door of any other debris.

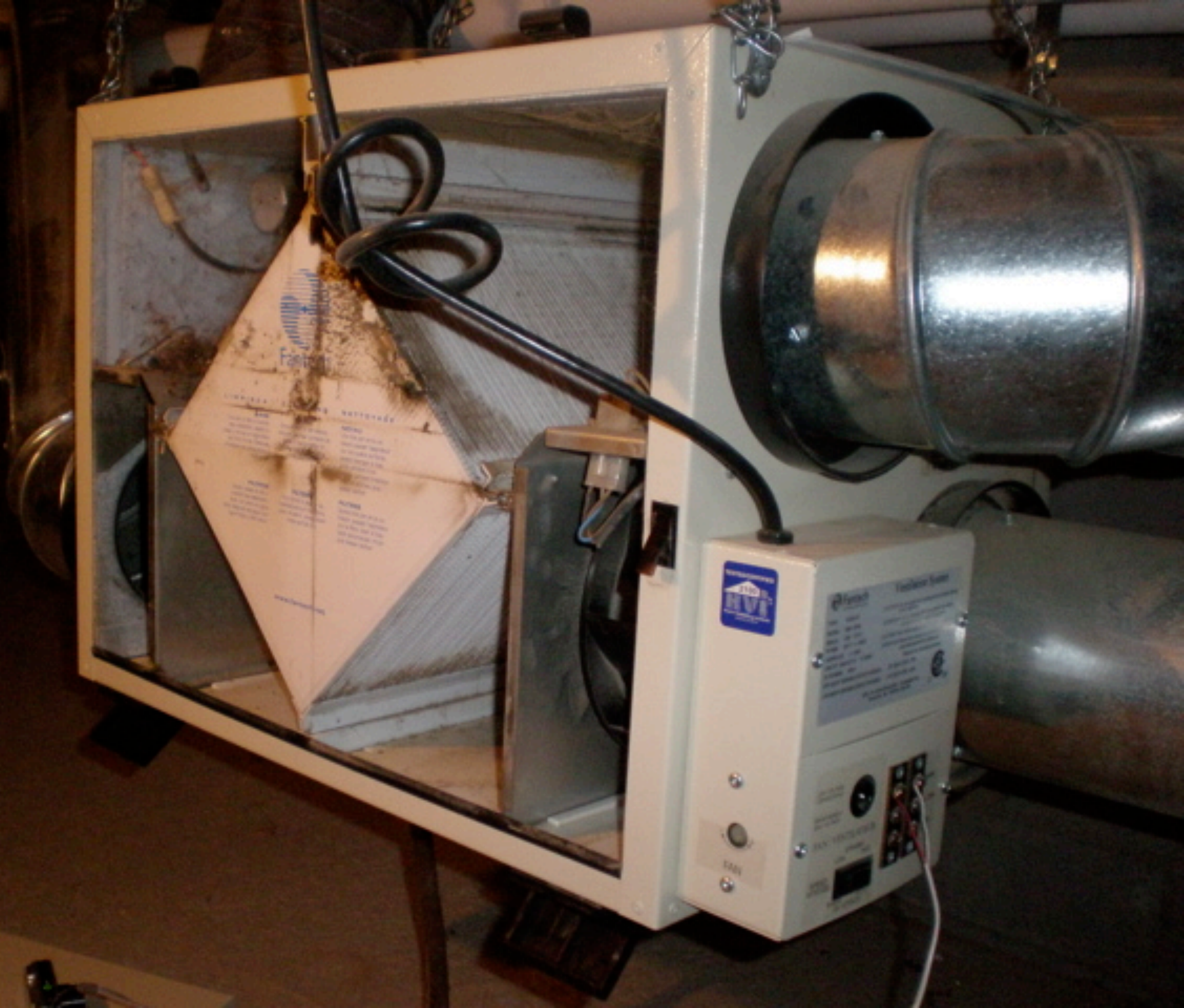


The Best Investment You Can Make

REVERSE ENGINEERING FOR
MAINTENANCE

10/14/08









...the ...
...the ...
...the ...













NO
PARKING
30 FT



Measurements and Predictions Accuracy Pays

Bias diminishes accuracy

We see what we want to see

We see what we expect to see

Moments of truth can be

both unwanted and unexpected

Unpleasant surprises rarely add value

The Blower Door Can:

Measure envelope air tightness

Predict heating and cooling costs

Identify/locate air leakage











Poorly Designed Buildings

A poorly designed building
can't endure prolonged weather flux
and
Requires high ongoing cash inputs
to maintain value

Poorly Designed Buildings

Become altars

where building components are
sacrificed to the laws of physics

Point of use products

Created quickly

Tailored to satisfy a particular short-term need

Time savers

From food to fabrics

What is a human life worth?

Am I just another fossil fuel extrusion?

Failure Analysis

How does the product interact with the building system?

What are the products specifications?

Are there critical installation criteria?

Was product operated properly?

What is the predicted service life?

Is component designed to be replaced?

Sustainable New Buildings

Affordable, durable designs

Easy installation

Predictable decay

Sacrificial wear parts

Simple affordable repairs

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AND DECOMPOSE
ON SOME GARDEN
SEEDS.



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OR DO
YOU
ADMIT
YOU
HATE
EARTH?

A
LITTLE.



“There is something fascinating about science. One gets such wholesale returns of conjecture out of such a trifling investment of fact.”

Mark Twain