



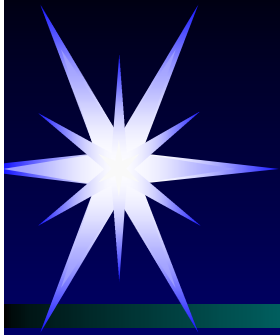
Grow ops, Mold and Risk Management

**Healthy
Homes
IAQ™**

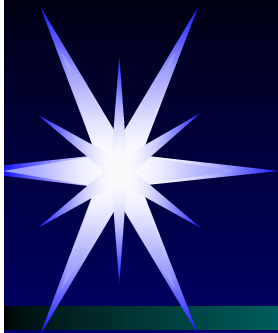


**Indoor Air Quality
Inspection Services**

Head Office:
Suite 104 - 3677 Hwy 97N
Kelowna, BC V1X 5C3
Phone: 250-862-6400
Fax: 250-861-4934
Email: info@healthyhomesiaq.com



- W Grow homes are one thing, but as an Environmental consultant, I've been asked many times by Realtors and Home Buyers how to identify a Meth Lab.
- W Below are pictures of four Labs for your review. I think it's pretty obvious which one is the Meth Lab. I hope this helps.



Yellow Lab



Black Lab

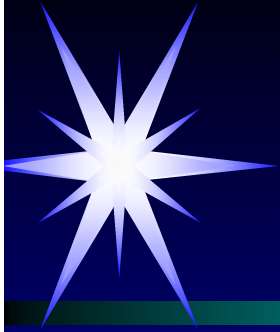


Chocolate Lab



Meth Lab nny.com

**You can see why this is such a
problem!**



Grow ops and Mould

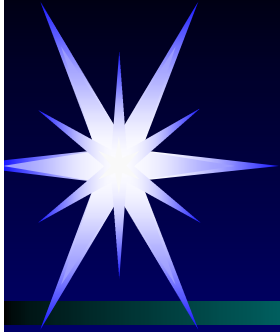
Grow op homes and Mold can be remediated

Grow op homes can be made safe

- and become the cleanest on the block ...

but

Competent validation and verification is essential



Key questions

- w What is so bad about a grow op?
- w What are the issues?
- w How can I ensure the issues are resolved?
- w Will the effects of a grow op resurface?

Not all are this easy
to spot

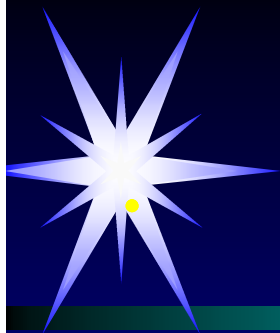




Is this dangerous? If so why?

Anything hazardous here?

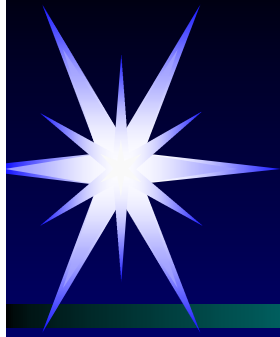




Toxic?

Mould?

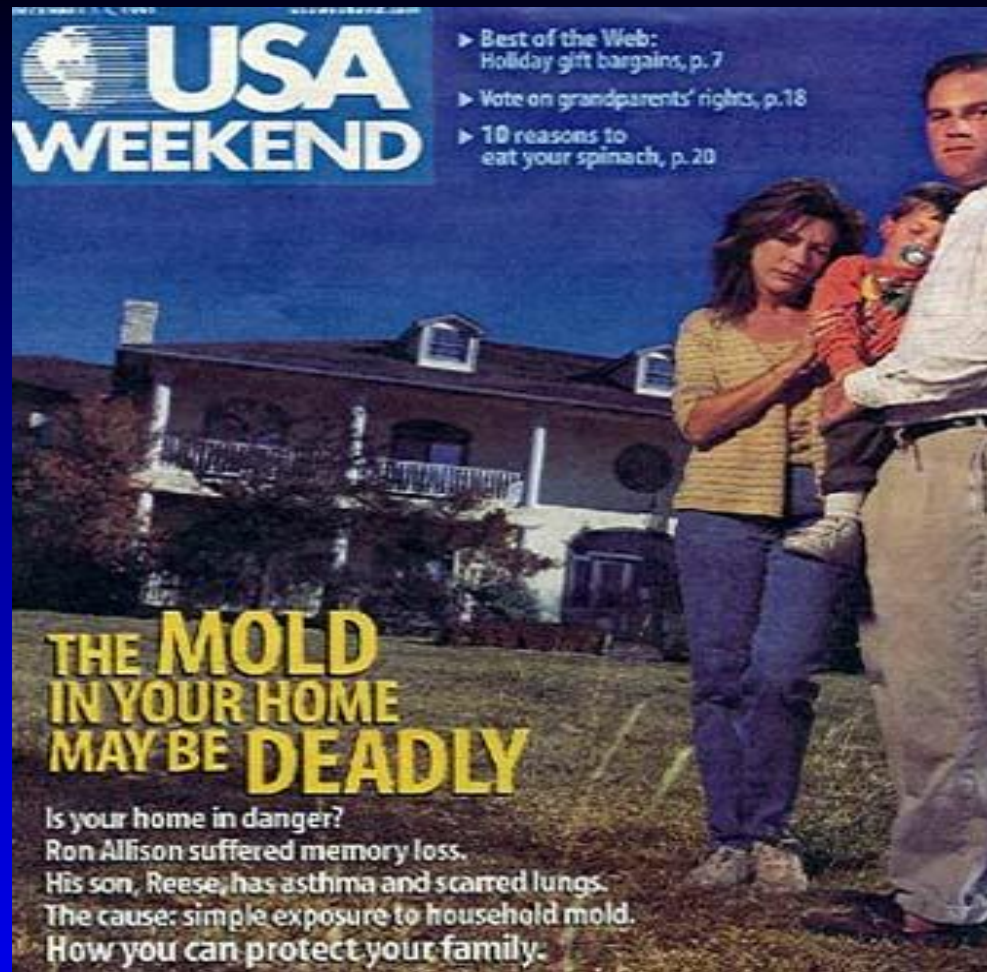




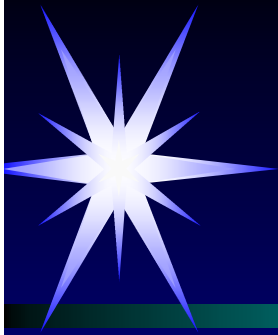
Media says it'll kill you!

The media says that grow homes are nasty with mean people inside, maybe bikers, or worse

But its more about the clean up and indoor air quality (IAQ)

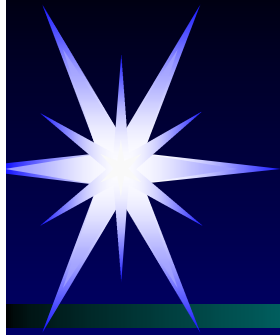


The media message is extreme as are
some stories



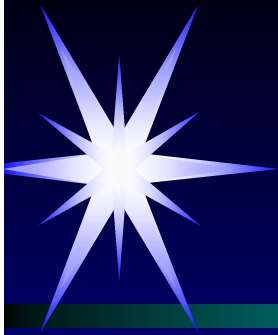
What is Indoor Air Quality

- w IAQ is a term used to express the healthiness of the indoor environment
- w It encompasses various toxins and hazards that can affect homes.
- w It can be measured
- w IAQ is a professional specialist field



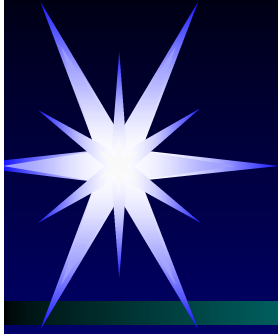
IAQ concerning Issues

- w More than 15% of the population is adversely affected by poor IAQ
- w 50% of Canadian homes are damp and moldy.
- w Some say 20% of Okanagan homes have had grow issues.
- w Home inspectors have this on their radar.
- w “grow” homes are most stigmatized



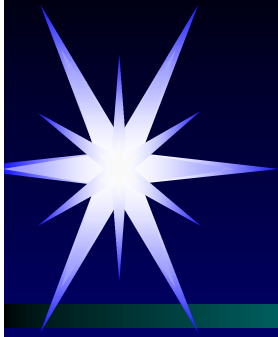
INDUSTRY CHALLENGES

- w Bylaw infraction consequences
- w Clean up protocol
- w Recertification of home after cleaning
- w Addressing media driven stigma
- w Resale value impacts



BUYER CONCERNS

- w Grow op stigma based on emotion
- w There's mold in the walls
- w The problems come back
- w I will get sick
- w House has to be resaleable

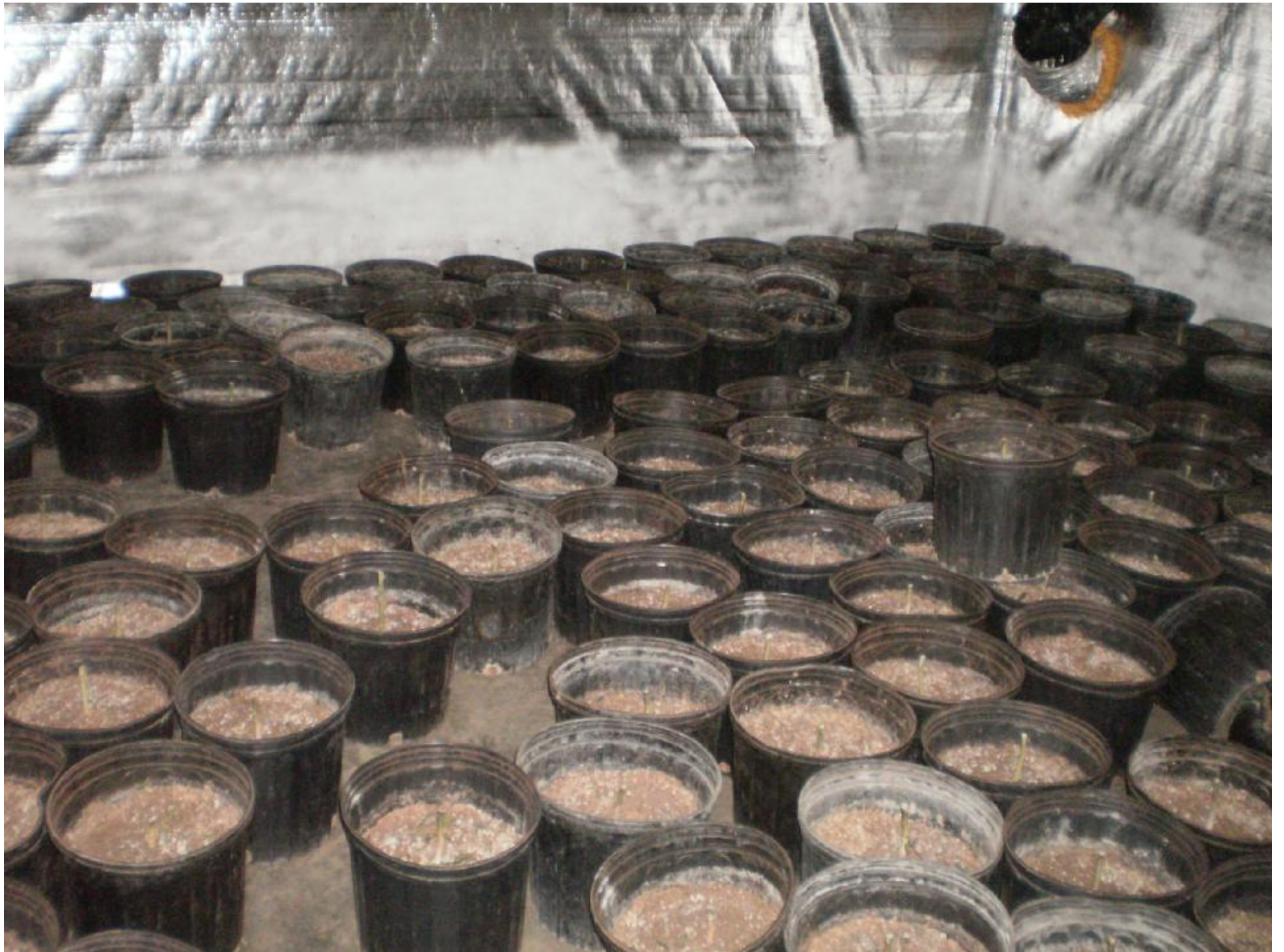


What's a Grow House?

- w A home that is used for growing marijuana
 - w small operation where part of the home is used as a grow operation
 - w larger operation where the entire home is full of plants
- w Hydroponics
 - w Chemicals
 - w Lighting

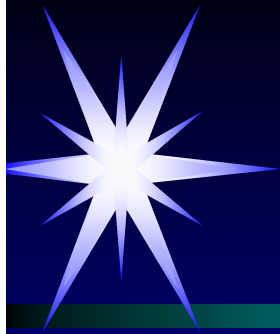
Small Grow Operation





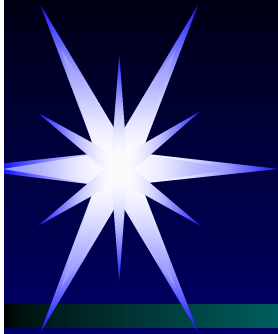


You may never know by looking at the home



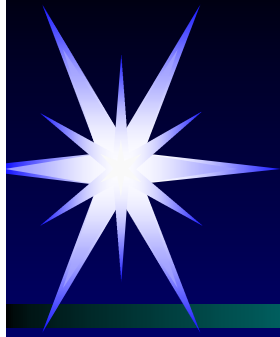
Large Operation

- w Usually involved with organized crime
- w MO #1
 - w Home is rented from an unknowing landlord
 - w Entire house is turned into a grow operation
 - w Very invasive and may cause damage
- w MO #2
 - w Home is purchased (often with cash)
 - w Entire house is turned into a grow operation



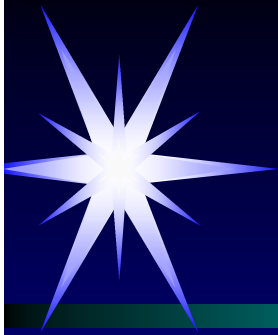
Lots of Money

- w One large scale grow operation in a modestly sized residential home
 - w Average of 200 plants per home
 - w Stats from drug busts
 - w Four to six harvests in a year
 - w \$200,000 to \$300,000 to grow operation
 - w Adds up to about one million dollars on the street



Hydroponics

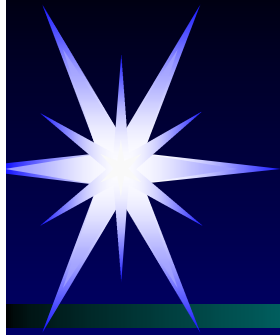
- W Growing without soil
 - w can set up a large operation without trucking in loads of dirt
- W Nutrients and water fed directly to the roots of the plant
- W Light provided with high intensity lighting units
- W Climate is controlled with ventilation systems



Hydroponics

- w Can grow entirely indoors
- w Plants can be very close together
 - w Roots don't have to spread out in soil
- w Faster growth
- w Larger and more lush growth





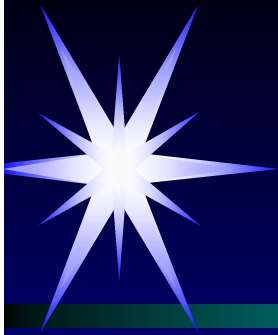
Affects On The Home

w Electrical

w Structural

w Cosmetic

w Mold



Electrical

- w Lighting and ventilation equipment

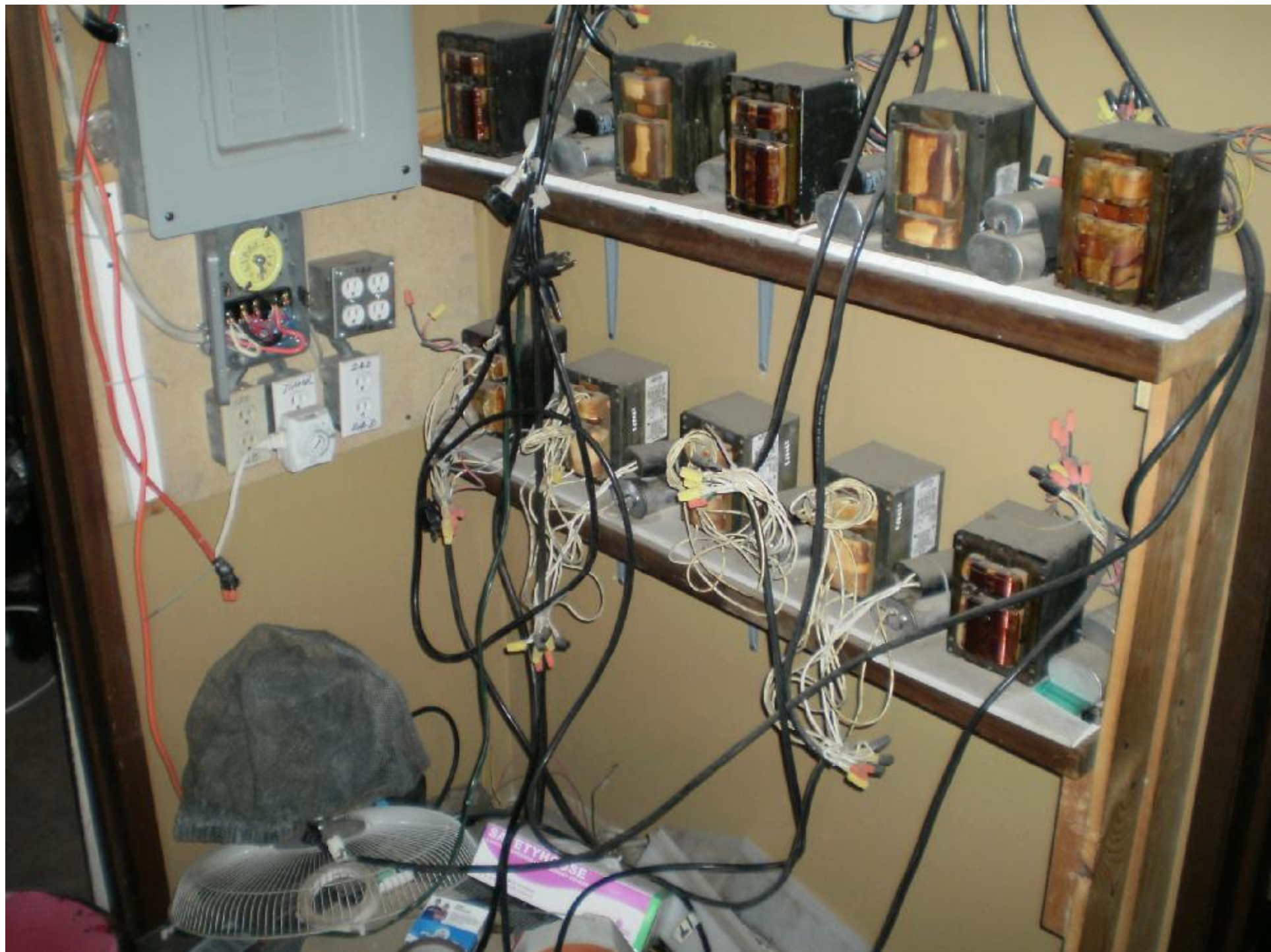
- w Uses a great deal of electricity

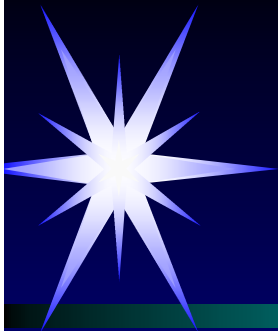
- w Ad hoc modifications of electrical system

- w Why?

- w Don't want electric meter to suddenly show increased energy usage

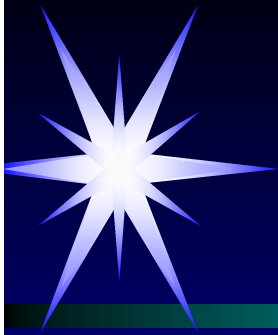
- w Don't want to pay for the electricity





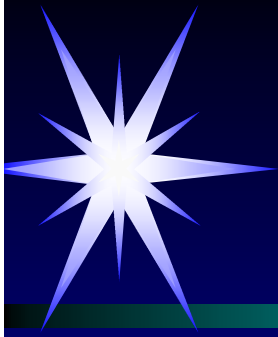
How Much Electricity?

- w Consider just the lighting requirements of a 1000 square foot grow operation –
 - w Need 3,000 lumens of light per square foot
 - w Total of 3 million lumens required
 - w 100 lumens per watt out of a HID bulb
 - w Gives us 30 KW of electricity (that's 125 amps at 240 volts!)
 - w Light cycle is between 12 and 20 hours per day
 - w Using only 12 hours per day we get 360 KW-hrs per day or about 130, 000 KW-hrs per year
 - w Using an average of 8 cents per KW-hr we get about \$10,000 per year



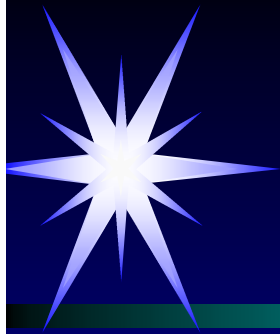
How Much Electricity?

- W In the previous calculation we only considered the lighting requirements
 - w Ventilation is also needed
- W Two factors were calculated
 - w Amps required is about 125 amps (this may be more than the service size for the entire house)
 - w Cost of about \$10,000 per year
- W This is enough to draw attention!



Stealing Electricity

- w To avoid drawing the attention of the electrical utility and the police
 - w Tampering with the meter
 - w Tapping electricity from upstream of the meter

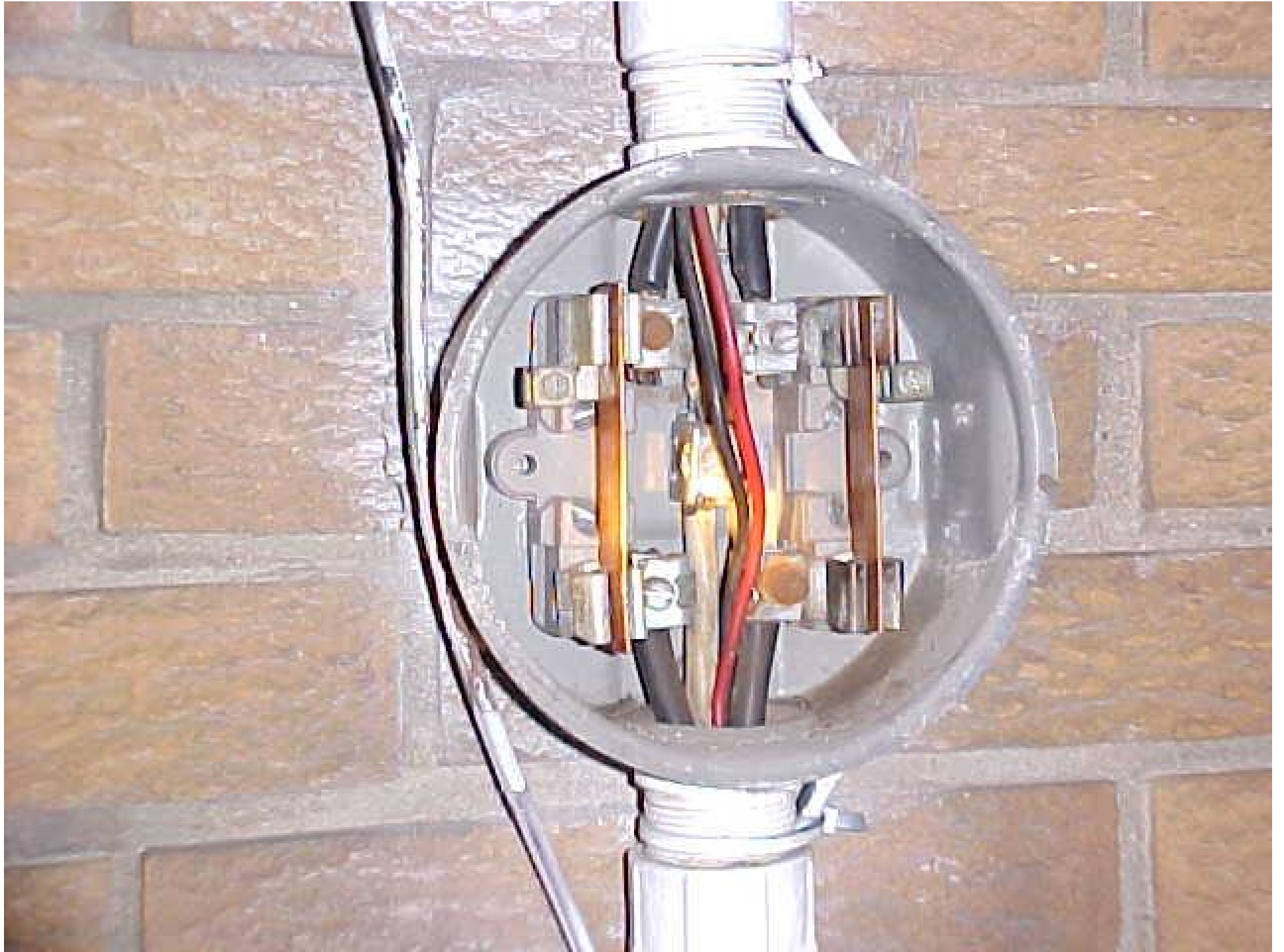


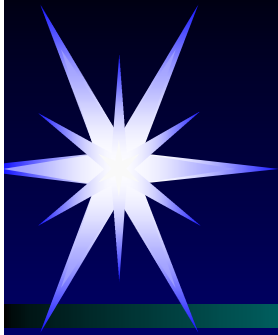
Meter Tampering

- w Remove the meter
- w Insert a shunt
- w Replace the meter
- w Most of the electricity goes through the shunt instead of the meter



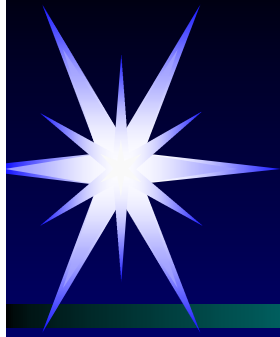






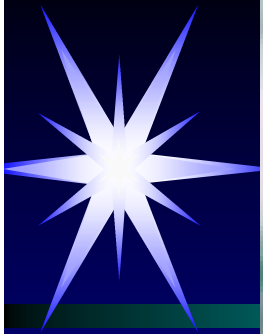
Meter Tampering Cont'd

- w Tampering evident on close inspection by a meter reader or a police officer
- w The electric utility may be tipped off because the home is now using too little electricity
- w A less obtrusive approach is to steal only the electricity for the grow operation and pay for the normal household amount



Tap Upstream of the Meter

- w Tap into the service drop cables
- w Tap into the underground cables
(service lateral)



Drip Loop

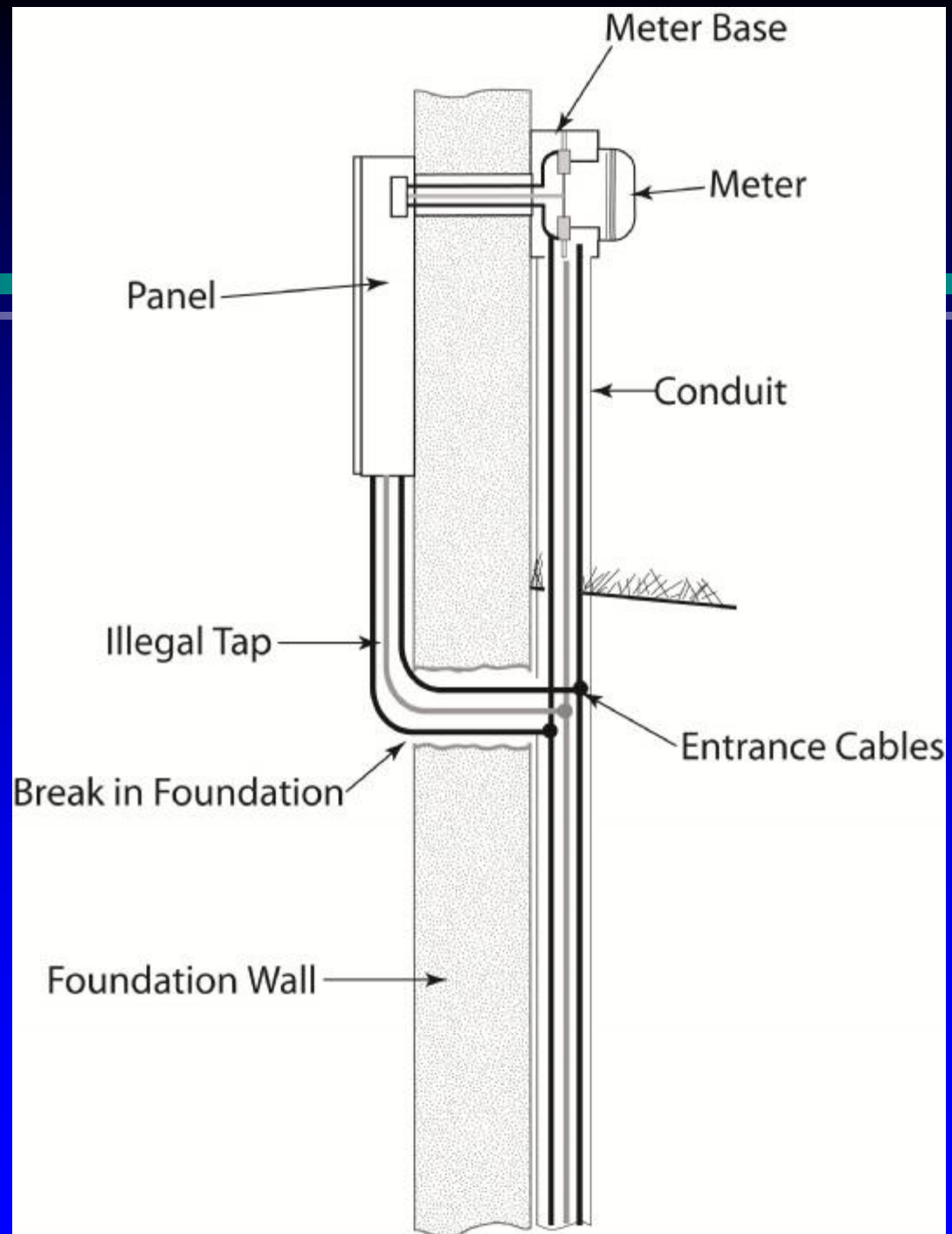
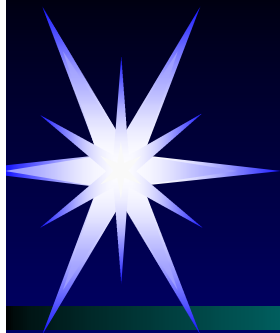




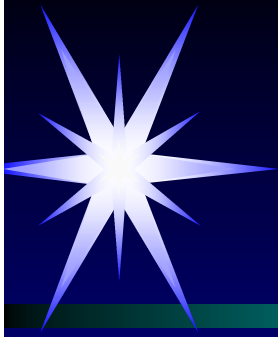






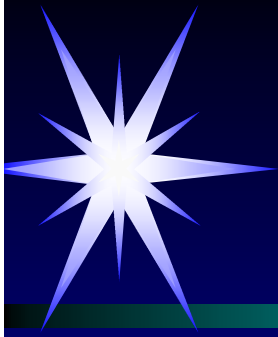






Effect on the Home

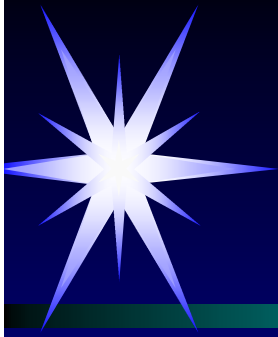
- w Electrical tampering as described causes very little damage to the house
 - w Removed the illegal panel and wiring
 - w None of the household wiring has been used
 - w Little chance that you have to worry about damaged branch circuit wiring due to overheating
 - w Replace underground service cable and



Effect on the Home

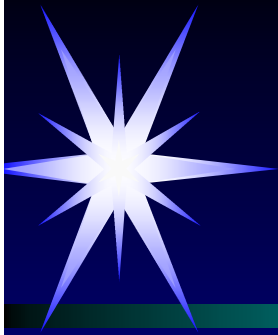
- w Electrical tampering may not be so clean
 - w The examples showed a very slick operation
 - w A less savvy operator may cause significant damage to the existing electrical system
 - w Use existing electrical system
 - w Install oversized breakers





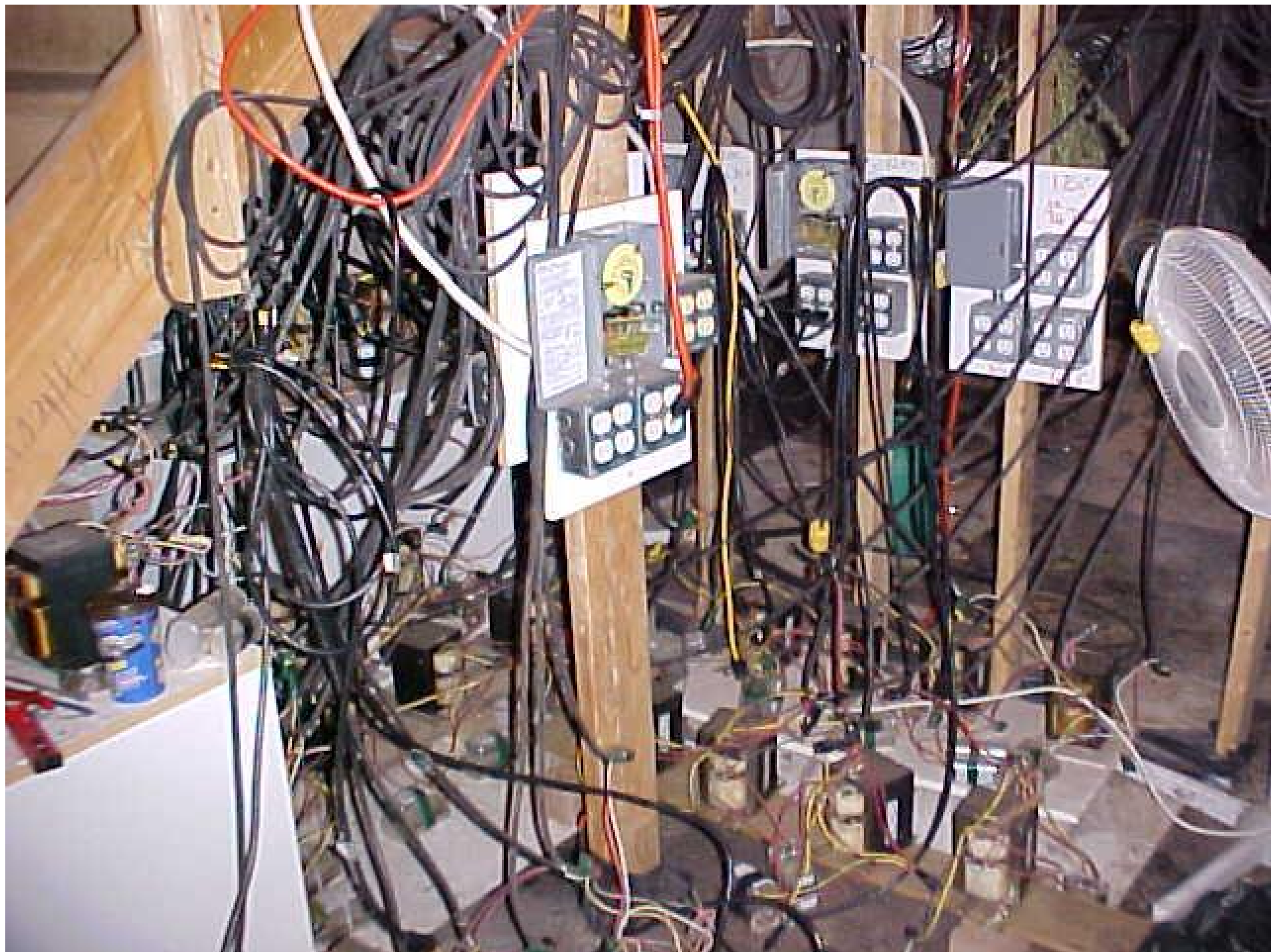
How about the hole

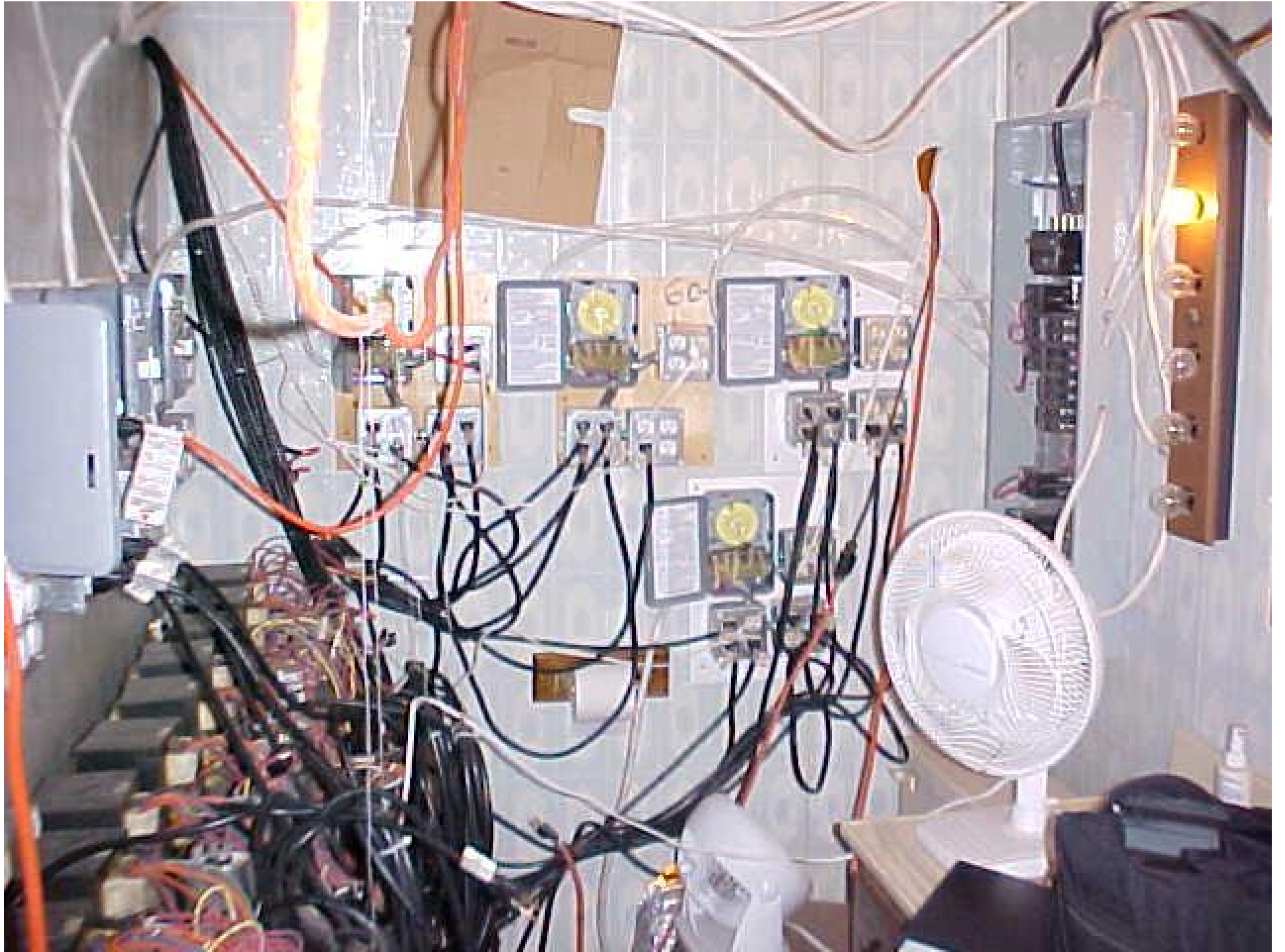
- w A hole in the foundation as shown causes no significant structural damage
- w Fill in the hole
- w Damp-proof the exterior
- w You are good to go



Danger of Fire

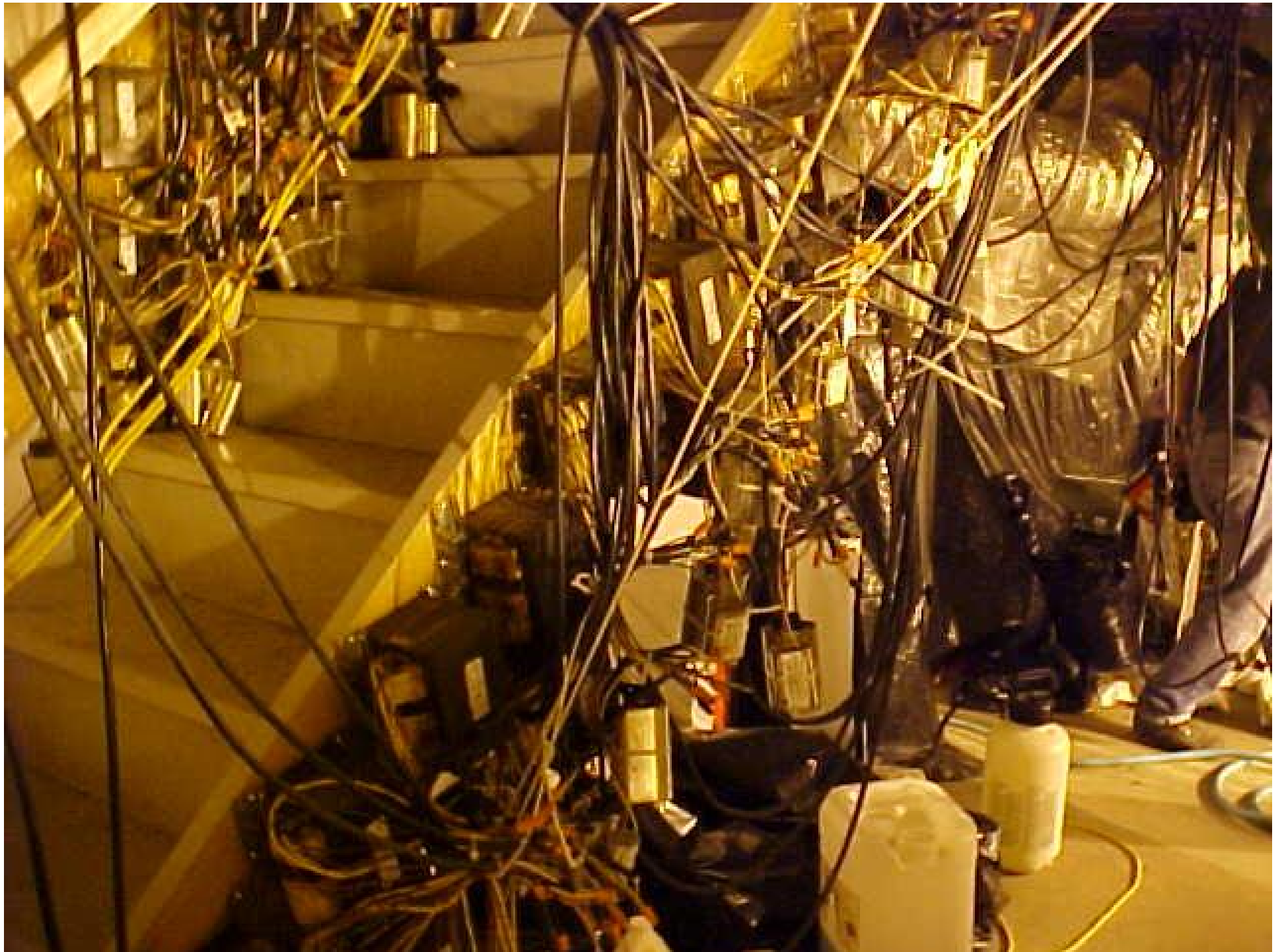
- w While the grow op is in operation
 - w Danger of fire
 - w An unsuspecting landlord could loose a home to fire if the tenants are running a grow operation
- w Let's have a look at the risk



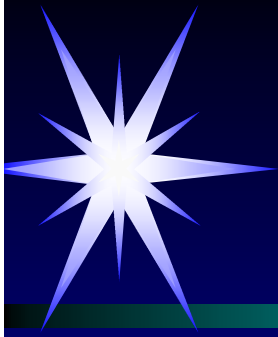










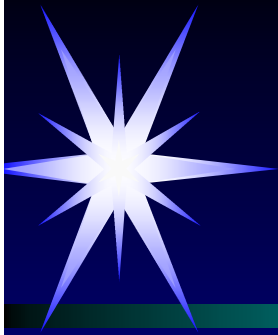


Structural Damage

- w Damage caused by modifications
 - w Not likely as big a problem as you might think
- w Damage caused by wood rot inside the walls due to high humidity
 - w Not likely as big a problem as you might think

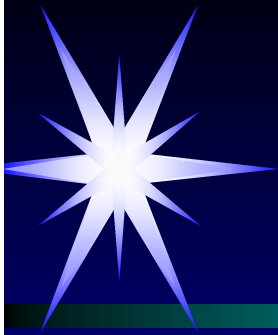






How About Rot Inside The Walls

- w Very high humidity levels could cause condensation inside the walls
- w Grow ops try to control the humidity levels with ventilation
 - w High humidity creates large leaves with low THC levels (low quality)
- w Still you could have localized high humidity
- w It would take a very long time to significantly affect the structure
- w Mold is a possibility but structural damage is much less probable



Rot in the Attic

- w This is a minor concern
- w The ventilation system usually discharges the hot, moist air into the attic
- w In cold climates this means extensive condensation on the roof decking
- w Usual visual effect is fungal staining.





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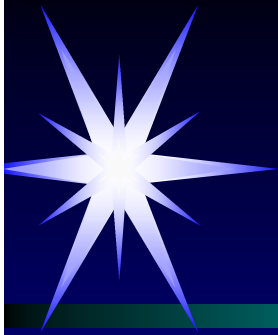
Before Calling for Service,
Please Check the following:

Is the power switch on? Is the filter clean?
Is the pilot light on? Is the gas valve on?
Is the breaker on?

Date	Service Performed	Technician
10/17/14	Cleaned filter & gas valve Adjusted pressure & checked for leaks	T. Thompson

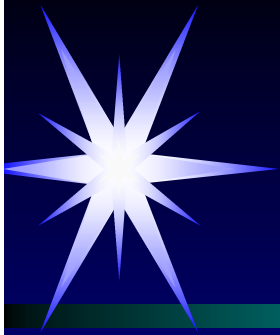






Mold

- w Will there be mold?
 - w Mold is a possibility from the high humidity environment
 - w Surface mold most common and is often visible (surface of walls, attic etc.)
 - w It is possible to have mold where you can't see it – inside the walls.

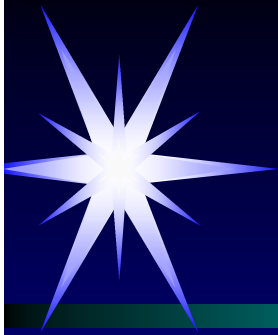


Is Mold A Concern?

- w There is a big range of opinion on this topic
 - w It is likely that the media's representation of mold is unfounded
 - w At the very least we all agree we would prefer not to have excessive mold growth in the home
 - w Remove the source of moisture (the grow op)
 - w Clean up the mold
 - w May be an extensive clean up depending on how the operation was run



Does it come back?????



Mold Health Effects

w People with lung sensitivity (allergy, asthma, COPD may find that mold triggers an attack)



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Article of the week for: Lawyers Weekly USA

TOXIC MOLD

... the Next Asbestos?

By Sylvia Halek

Claims for personal injury and property damage caused by mold growing inside buildings are on the rise, plaintiff lawyers and insurance defense attorneys tell Lawyers Weekly USA, and some experts predict they will be the next big tort wave.

"It's a trend. It's one of the hottest issues in construction defect as well as toxic tort law. I view these mold claims as similar to asbestos 10 years ago," says Alexander Robinson, a Los Angeles plaintiff lawyers who is currently representing over a thousand plaintiffs against hundreds of building owners for mold contamination.

Injuries from mold range from respiratory problems, skin rashes and headaches to lung disease, cognitive memory loss and brain damage, experts say.

"Mold is everywhere. There are no specific government guidelines and not a whole lot of medical information on it. It's ripe for lawyers to get into and exploit it," says Sara Thorpe, a San Francisco defense lawyer.

"Anyone who lives in a mold-contaminated building has the potential for litigation," says David Gervino, a Boston toxic tort defense lawyer.

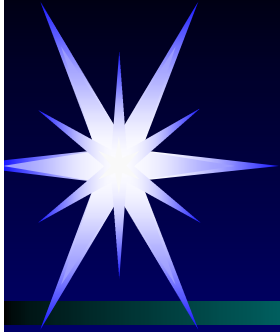
Claims include:

- property damage and personal injury claims against homeowners
- construction defect claims against builders, contractors and architects

<http://www.lawyersweekly.com/feature.cfm>

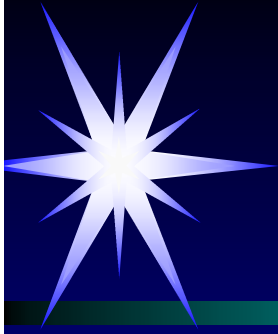
10/1/00

Media Hype doesn't help



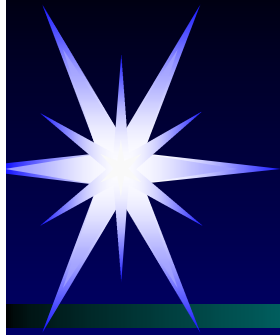
KEY INSURER ISSUES

- w Competency of building
- w Resaleability of building
- w Unknown hazards
- w Potential for future degradation



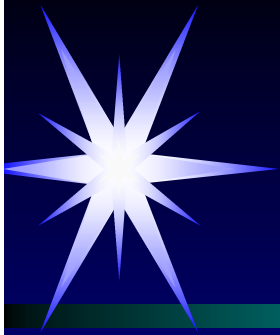
BUILDING INSPECTOR

w Might have a bias against grow homes



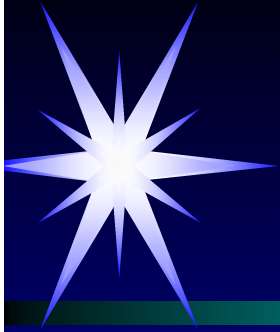
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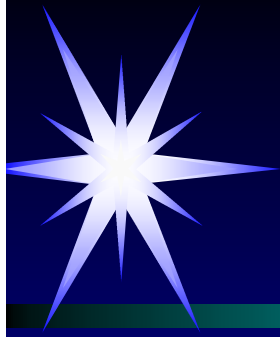
MOLD SOLUTION SUMMARY

- w Professionally identify extent of problem
- w Only microbial remediation contractors
- w Only third party Consultant verification
- w Don't be afraid to talk about indoor air quality
- w Understand home buyer's concerns
- w Ensure their questions are answered professionally



SPECIALISTS

- w EPA/ IICRC registered contractors
 - w Needed if extensive demolition required
 - w Needed if fungi is toxic or pathogenic
- w Environmental consultant
- w Professional third party testing.



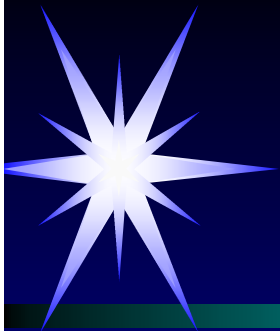
Repeat repeat repeat

w Grow ops can be cleaned, indoor air
quality problems solved

w Homes can be recertified safe

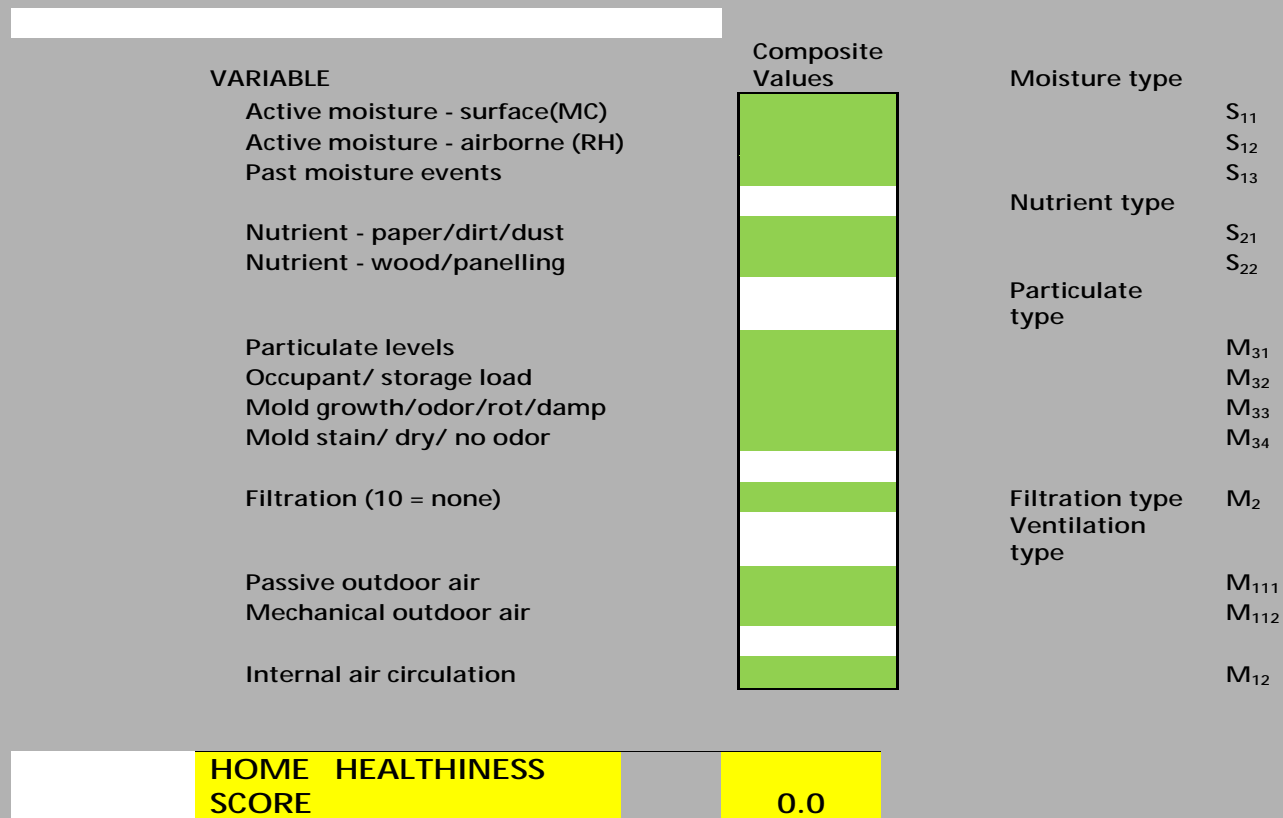
w When its clean its clean

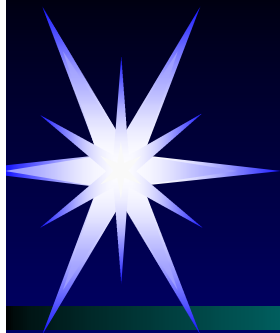
Your investment is safe



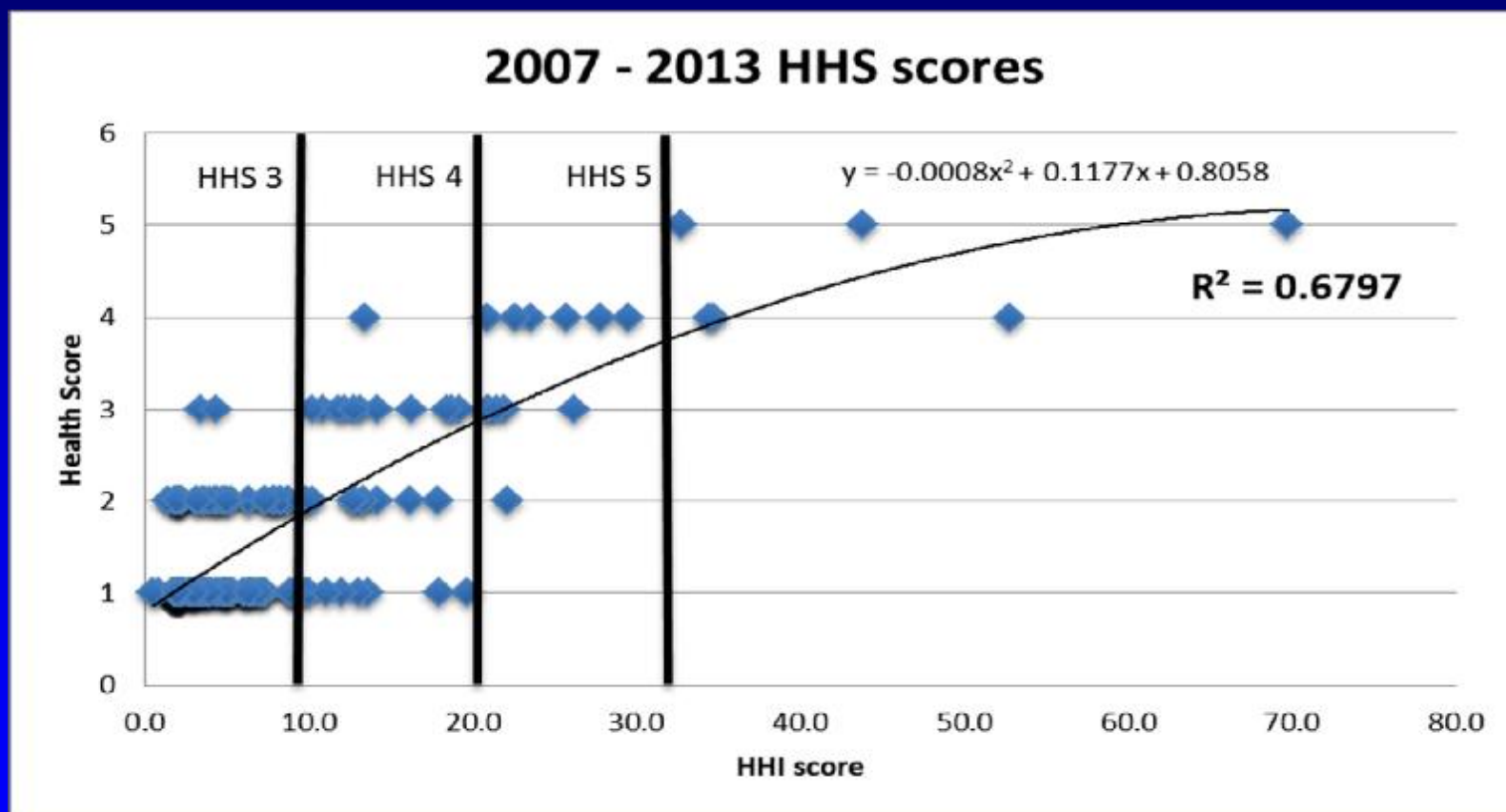
Future Developments

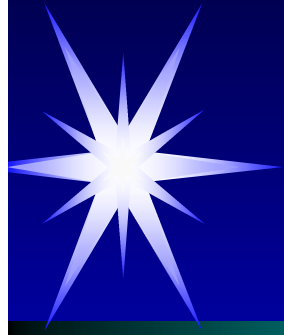
HOUSE HEALTHINESS EVALUATION SUMMARY





Home & Occupant health Graph





Questions
