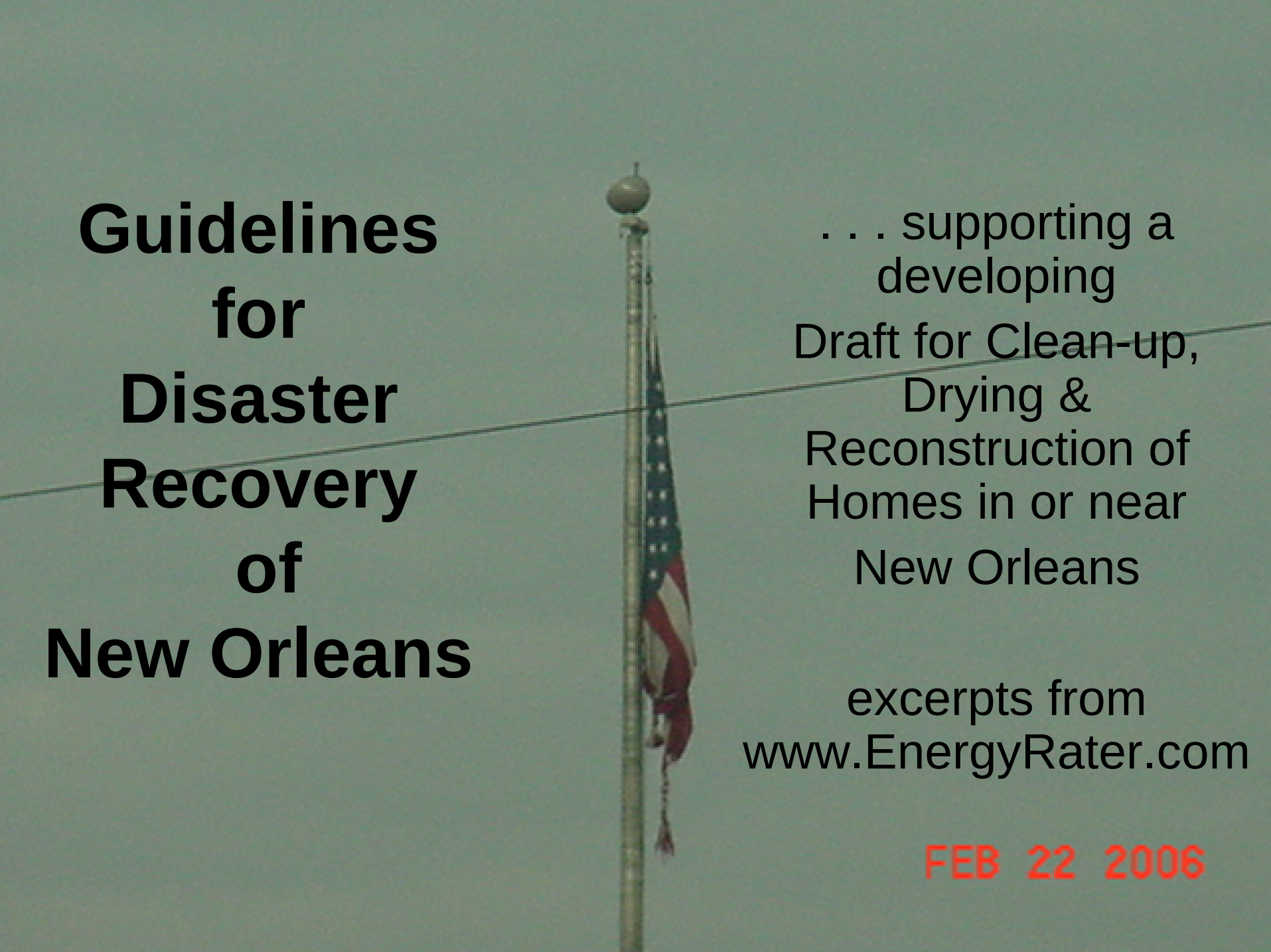


Guidelines for Disaster Recovery of New Orleans

. . . supporting a developing

Draft for Clean-up, Drying & Reconstruction of Homes in or near

New Orleans

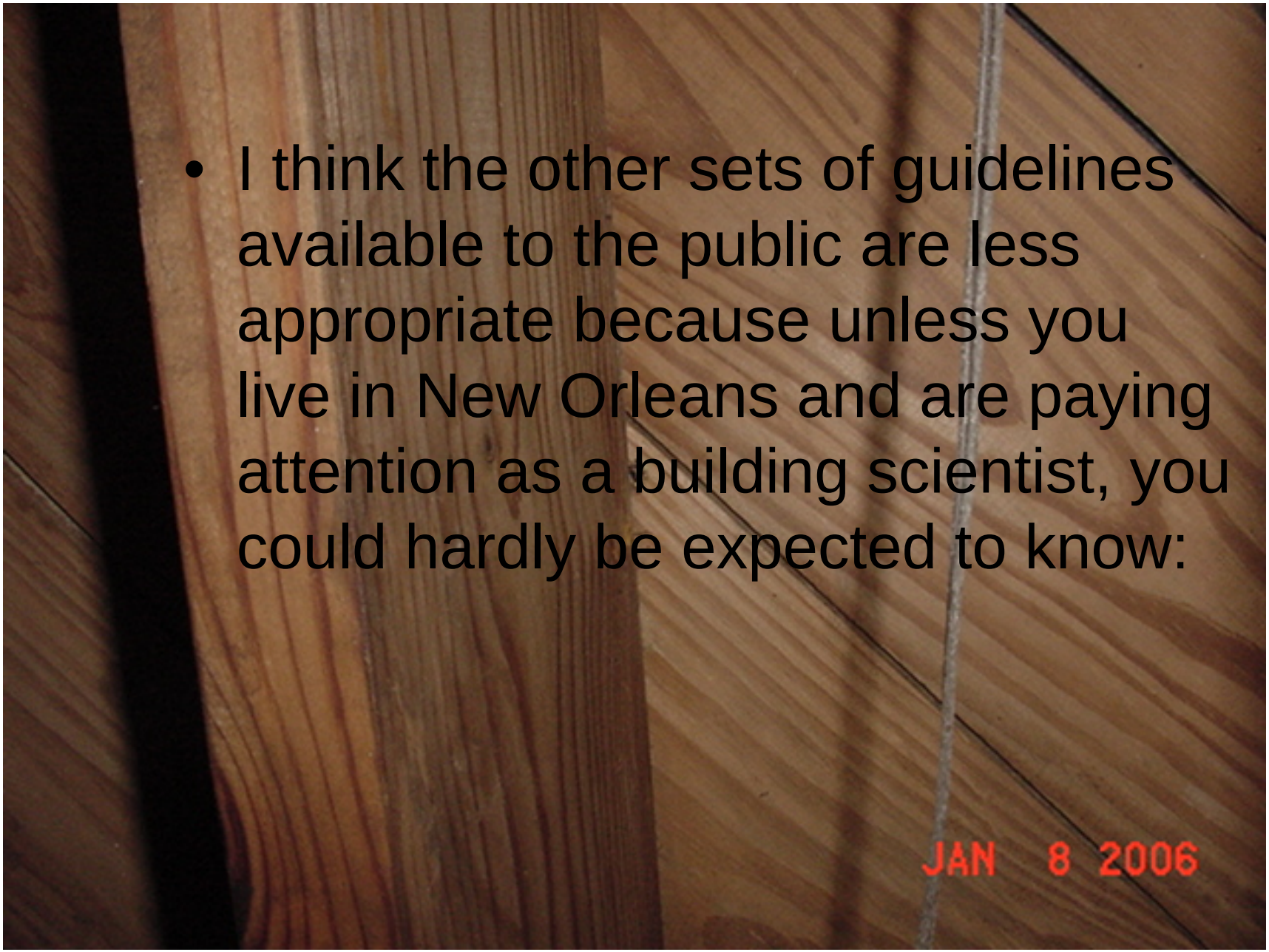
excerpts from
www.EnergyRater.com

FEB 22 2006

- As a building scientist and New Orleans resident, I have elected myself to write this document. Although others have written various things along these lines..

- Under normal conditions, I would never "publish" such work, but this is an emergency situation and as such it calls for unusual methods and abandonment of concern for what others might think about my scholarship. I have chosen to purposefully make assertions about details that I am not completely certain. I have done this with the hope that my reviewers will either catch the errors or provide the extra information to allow me to have adequate confidence. I am not an expert in all of the various fields the guidelines discuss. I am hoping you, my reviewers will fill those gaps.


THE
CHALMETTE PLANTATIONS
Scene of the Battle of New Orleans
Dec. 1814 - Jan. 1815
Battle raged on lands of Ignace de
Lino de Chalmette, Antoine Bienvenue,
and Denis de la Ronde. British camps
on lands of Jacques de Villeré and
Pierre Lacoste; hospital on Jumon-
ville de Villiers. Jackson Defense
Line on Edmond Macarty place.
FEB 22 2006

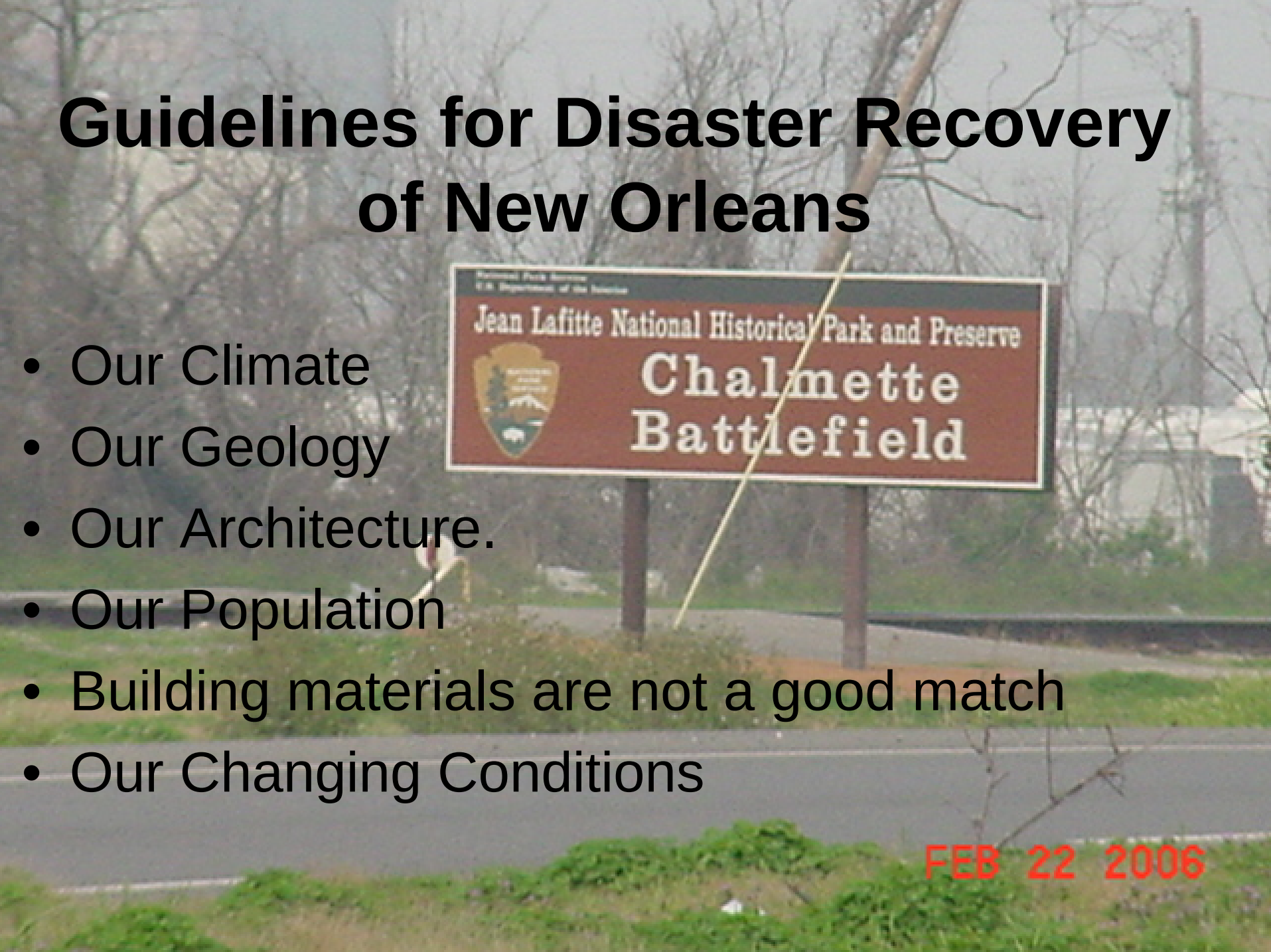


- I think the other sets of guidelines available to the public are less appropriate because unless you live in New Orleans and are paying attention as a building scientist, you could hardly be expected to know:

Guidelines for Disaster Recovery of New Orleans

- Our Climate
- Our Geology
- Our Architecture.
- Our Population
- Building materials are not a good match
- Our Changing Conditions

Guidelines for Disaster Recovery of New Orleans



- Our Climate
- Our Geology
- Our Architecture.
- Our Population
- Building materials are not a good match
- Our Changing Conditions

New Orleans **Climate**

- Over 60 inches of rain per year -- is not quite a rain-forest but as often as one month in four years it rains every day and when it does only construction suitable for a rain-forest will tolerate the unrelenting exterior wetting.
- High dew-points throughout the year. This condition make the use of carpets toxic breeding grounds, vinyl wallpaper a sure site for mold growth, hard-wood flooring over open crawl-spaces foster a predictable warped wood condition, algae-covering makes even light-colored roofs dark, and heat and moisture flows through our wall surfaces cause premature flaking of paint.
- Following the flood in September there was a two-month draught.
- During half of our current winter days so far, the highs were above 70 degrees F.
- The near-surface ground temperature is warmer in the winter and cooler in the summer than we normally condition the living spaces of our homes.

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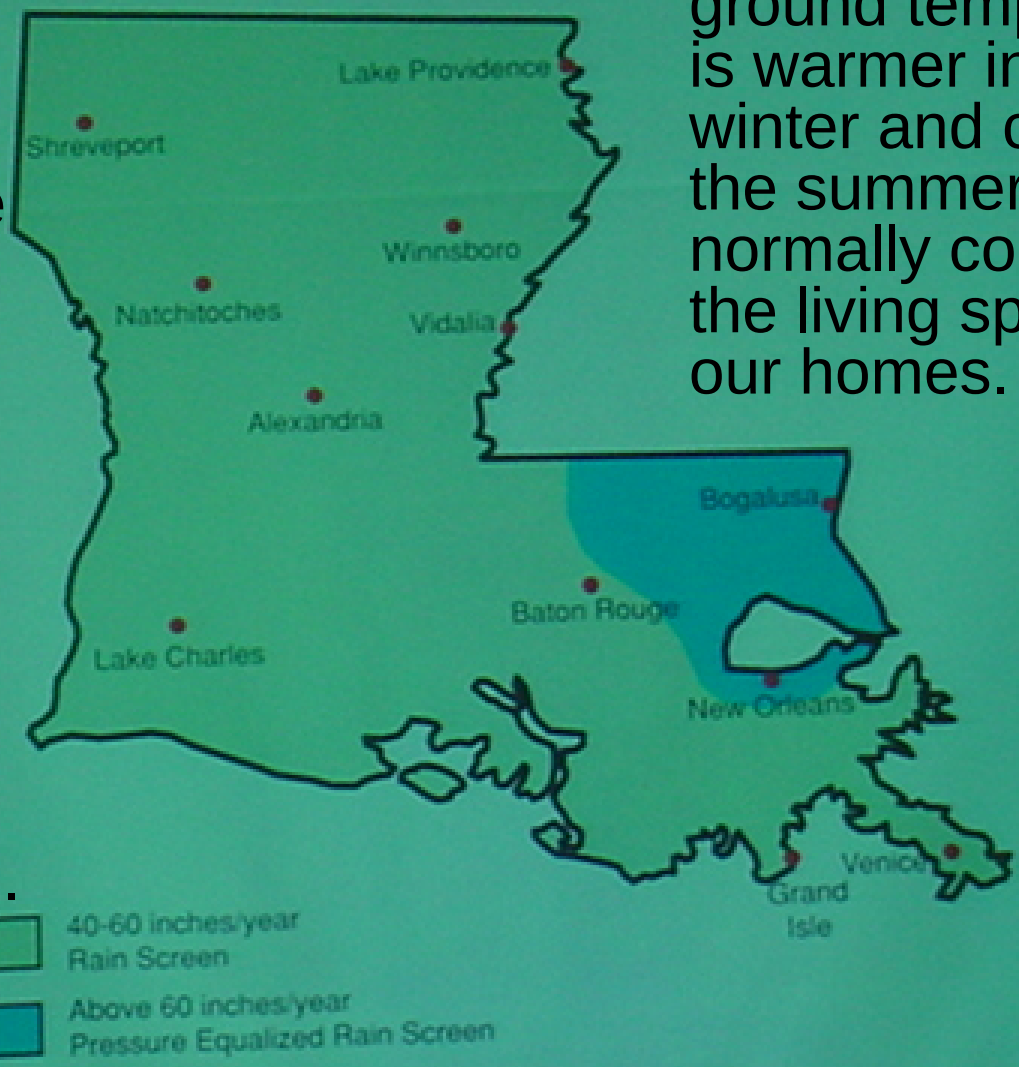

DEC 15 2005

New Orleans Geology

- Our homes are built on alluvial deposits. Sagging foundations are the rule. The resulting house-leakiness is the primary cause of heat loss/gain and moisture leakage into our homes. Trees speed up this process. Leaky roofs are often the result as well.
- Extremely high moisture content in the soil together with the sun's drying effects causes vast amounts of water-vapor flow through a home, from the bottom to the top. This flow must pass through ceilings or roofs. If impeded, building failure is likely.
- The soil is high in clays so it will grossly expand when wet and contract when dry, but it will also wick moisture rather than hold water when wet for hours.


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FEB 22 200

New Orleans Architecture

- The majority of the homes that were higher than the flood were built before the advent of air conditioning. To facilitate drying they were balloon framed, i.e., without top or bottom plates; they were built to breath and not hold back infiltration. As we now make them more air-tight and/or add insulation, we retard those airflows and slow-down drying.
- Slate was the rule in the older homes. The way these roofs were originally constructed, they could last hundreds of years, but when they are not allowed to breath because of the use of underlying felt papers, such roofs rarely last 30 years.
- Cypress was the building material of choice. If your home has it, deconstructing the walls to allow the studs to dry out maybe completely unnecessary since the primary need for that drying: wood rotting fungus, doesn't eat cypress.
- Most of our older homes have double-hung wooden windows set in frames that are no longer rectangular; thus they cannot be closed. Usually the upper sash is painted open.

SEP 13 2005


SEP 13 2005

New Orleans population

- Homeownership was not the rule in New Orleans.
- We have natives who almost never close windows living next to neighbors who seldom open them.
- Most New Orleanians are very tolerant of mold in high concentrations.


STOP
FEB 22 2006

Common Building materials are not a good match

- Because the moisture load is twice the sensible cooling load, standard and nationally-distributed cooling equipment is not engineered to be a good match for our climate and building stock. This makes sizing and installation extremely important to function.
- Insulation and windows come with recommendations or construction that is usually upside or backwards for proper use in our climate.

Changing Conditions

- Outside mold concentrations have become very high.
- Many local or state-sponsored announcements or publications are available, incomplete, dated, make wrong assumptions or are written by out-of-state experts who don't know much about the preceding information.
- No one is talking about wood-rotting fungus, instead the local concern is mostly limited to mold; but in most cases, the flooded homes are not occupied and may never be.
- No one is talking about subsidence of homes that were not flooded but sustained this damage because of the flood and draught.


DEC 28 2005

Our Changing Conditions

- The average homeowner doesn't know much about the probability of whether his home will more likely be bought for renovation/restoration or more likely bought for the land alone.
- Until early January 2006, most of the recently flooded areas of the city had no natural gas service. This situation is now changing. But access to electricity is even more limited. Thus strategies for drying are usually passive.


JAN 11 2006

Changing Conditions

- Ten of thousands of homes have been gutted, but only a minority have been remediated via certification, few were tested properly for moisture, many are already under-reconstruction, and few official sources are advising the kinds of steps described in the proposed draft guidelines. Thus many if not most homes will be put back together with little effort to make them more resistant to future moisture problems.

Changing Conditions

- The city is very, very short on building inspectors, so most errors in reconstruction will never be checked in time.
- The city is grossly underfunded and has not received promises much less funds to face the infrastructure rebuilding problems much less the building-code inspection problems.
- The toxic chemicals in the flood waters have in some cases served to prevent mold growth. This is probably more bad news rather than good news.
- Most builders and homeowners are firmly convinced about erroneous or even dangerous building practices including: vinyl wallpaper, attic fans, ventilated crawlspaces, felt paper under slate roofs, fiberglass batts, etc. etc.

Changing Conditions

- Mortgage companies, insurance companies and real-estate agents are requesting mold certificates, but no one is requesting that proper steps are taken to avoid new moisture problems.
- A large percentage of the restoration work is being done by out-of-state companies and foreign workers. This situation breeds defects in climate-appropriate building practices.


FEB 14 2006

Confusion

- Some parts of the city are slated to become green spaces?
- No clear effort to fix levees.
- Insufficient funds allocated to fix infrastructure
- Insufficient funds allocated to provide residents with the resources to rebuild.
- BUT PROMISES FOR ALL OF THIS!


SEP 29 2005

Economic Conditions

- Rent is on track to more than double.
- Real Estate sale prices are higher than pre-Katrina where there was no flood.
- Sales in SOME of the flooded areas are brisk.
- Lots of work
- Great shortage of really skilled labor.
- The indigenous experts are over-worked.


SEP 15 2005

Local Non-Profits Step Up

- Alliance for Affordable Energy
- Green Project
- Preservation Resource Center
- League of Women Voters

Local Non-Profits Step Up

State Help Has Come

- LSU Ag Center
- Louisiana Engineering Society

Extreme Climate Design

Joseph Lstiburek, Ph.D., P.Eng.
Building Science Corporation
Westford, MA

www.buildingscience.com

Out-of-state help has come.

- NRDC
- Global Green
- National Trust for Historic Preservation
- National American Institute of Architects
- International Codes Council
- US Green Building Council
- Mercy Corps
- Habitat for Humanity
- But more is needed.


JAN 3 2006

Guideline writing morphs

- Decision was to write a series of one page flyers starting with Cathedralized Attics.

Cathedralized Attics
Affect
HVAC, Roofing & Insulation
Performance & Specification

Tenth Joint Engineering Society Conference (JESC)

Lafayette, Louisiana

January 26, 2006

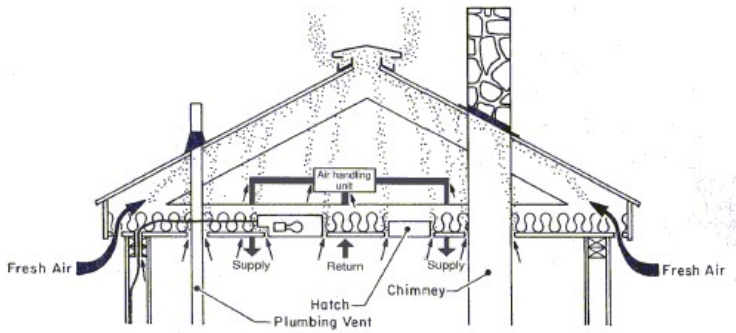
Myron Katz,

Norman M. Witriol & Jinson J. Erinjeri

Build it back right! 1

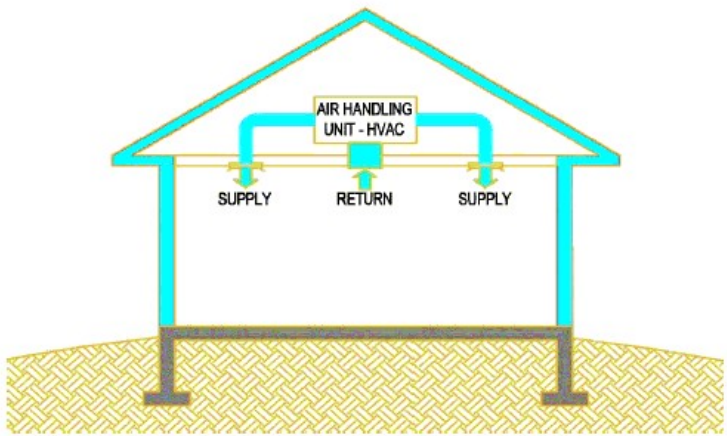
Sustainable Tip One: Cathedralized Attic

A consortium of non-profit organizations and their allies have released this as a public service



Air leakage paths into an attic

Typical Attic Now



Shading depicts the building's thermal barrier and pressure boundary which together enclose the conditioned space.

Save 25% of your heating and cooling bills by insulating your attic right below the roof!*

Recent building science research and experience has shown that the holes in your attic floor allow airflows that waste lots of energy, these include holes in and around: electrical wiring, ducts, ceiling lamps fixtures, bathroom fans, ceiling registers and the attic access door,. This situation is more wasteful than leaving windows open while running the heater or air conditioner. It is important to understand that most types of insulation are not airflow barriers. Because it is very difficult to seal the holes in the attic floor, an effective and affordable solution is to insulate the attic with a cathedral ceiling. The attic then becomes part of the conditioned space, and leaks to the attic become internal leaks.

Reduce energy bills while you enhance comfort, health, safety and your home's durability.

You Can Help

- Come help us rebuild.
- Help us write up more sustainable tips.
- Train our contractors.
- Keep reminding all Americans that know that this was not a natural disaster…
- AND, that New Orleans and Louisiana has not gotten the help or money it needs.

We’ll be back!

- Depend upon it!
- But in what form?
- Will it be built back better and smarter?


KATZ LOUNGE
OPENING SOON
WELCOME HOME
shop-vac
WORK TABLE
FEB 22 2006