



Resilience Action Fund

For a Stronger and Safer
Built Environment

13 TRUTHS AMERICANS SHOULD KNOW ABOUT PROTECTING HOMES AND BUILDINGS FROM NATURAL HAZARDS

1. People, not natural hazards, cause disaster losses

The US is one of the most hazard-prone countries in the world. Yet, we underestimate the power of natural hazards in the siting, design and construction of our homes and buildings, thus exposing ourselves to disasters. Which is why the US ranks #1 worst globally in terms of disaster losses.

When faced with hazards, we rely on evacuation as the base plan. This may save lives, but sacrifices livelihoods. Preserving livelihoods requires protecting our assets. Consciously or by default, we all make choices on how 'resilient' to hazards the homes and buildings we live and work in are. This is not just a public issue; it is very much a private one.

2. Government codes do not protect us from losing our home or building

Evacuation and asset preservation are parallel but separate objectives. The truth is that codes are not meant to save buildings; simply to give people enough time to escape. They create a false sense of asset security and repeatedly prove inadequate in protecting our homes and buildings.

The US suffers from a fragmented and inconsistent system made up of thousands of local codes, with no federal regulation or oversight. Even when current and enforced, they represent a low level of asset protection deriving

from back-room compromises of technical, business and political interests. In many locations codes are 5-10+ years out-of-date. Even worse, in almost all cases older buildings operate under decades-old 'grandfathered' rules.

3. Public infrastructure cannot adequately protect us from natural hazards

We commonly believe that public infrastructure will faithfully shield us from hazards. The truth is that much of our infrastructure is under-designed, aged, poorly maintained and used today way beyond its original intent. It is routinely 'bandaged' to stay functional.

Codes for homes and buildings typically also assume the protection of infrastructure. By resting on this we invite disaster. While public attention focuses on infrastructure resilience, it is limited consolation for those who lose their lifetime possessions to hazards. Protecting private assets requires as much, if not more, private action.

The paradox is that 80% of the economic losses of disasters are generally in homes and small businesses, while we focus 80% of public attention on infrastructure and public structures. In fact, while we question the standards for infrastructure and public structures, the standards for homes and small business buildings are set significantly lower.

4. We don't realize how much risk we take by accepting '1 in 100' year events

We commonly and falsely interpret this to mean an event occurring over regular intervals once every 100 years. While it might average out so over millions of years, in our lifetimes it could happen many times. The truth is these estimates repeatedly prove wrong in predicting the future because they derive from limited hindsight information.

Even if correct, '1 in 100' means a 1% probability of the event independently occurring each and every year, which translates to a 40% chance over a 50-year adult lifespan. A stricter '1 in 500' year standard reduces this risk to 10%. How much is lowering this risk worth to you, if you stand to lose a large portion of your lifetime savings and possessions in your home?

Given that almost all areas face at least 2-3 simultaneous hazards (fire plus wind, seismic and/or flood), the compounding of these risks could be significant. It means that the chance of getting hit by at least one, or more, of three '1 in a 100' year independent hazards over a 50-year lifespan

is 78%! By raising the bar to a '1 in 500' year hazard standard, that chance drops to 27%.

5. The safest way to protect your home and assets is to go 'Code+'

Code+ means addressing today's and tomorrow's potential hazard levels by voluntarily going above current standards in siting, design and construction. Example: applying a '1 in 500' standard, when codes may only require '1 in 100'.

In many cases, the cost difference between code and Code+ is around 15%. Think of it this way: would you rather spend on a home/building that is 15% larger, or one whose chance of survival is 65% less? Stronger, rather than bigger is the safer and better investment.

The most practical and economic time to do so is during initial construction, but it can also be done with smart retrofit upgrades. This decision protects your egg nest, gives you peace of mind and saves in annual costs, such as insurance and maintenance. Code+ resilient buildings are your best private defense against future natural hazards.

6. Affordability is a poor excuse for keeping building standards low

Up until now industry lobbyists have used affordability to justify weak codes and compromised standards. 50 years ago this was also the case with automakers. In the 1960's they claimed the public could not afford greater auto safety, and resisted the safety standards and designs that today we take for granted.

History proved that automobiles stayed affordable all along, even after higher standards were imposed. The reasons: competition, innovation and production efficiency (rather than stagnation). What changed were the automakers themselves. In fact, current auto builders have turned 180 degrees and now employ safety and resilience as a competitive marketing feature.

Today's construction industry needs to be placed on a similar path. Rather than allowing affordability as an excuse to keep resilience dangerously stagnant, we can make resilience affordable by spurring competitive ingenuity and efficiency in home/building construction.

7. Insurance is no substitute for Code+

We commonly believe that insurance can sufficiently protect us from hazard losses. The truth is that insurance is a way of sharing residual risk, when we all are generally doing the right things. If we are all living too dangerously, insurance costs just keep rising. Low standards, codes fragmentation and public policies that encourage risky behavior are the underlying reasons why insurance is rapidly rising, or in many cases, becoming unavailable.

By staying with current and grandfathered standards, paying more for insurance will not protect us from personal loss and disruption. The best insurance we can buy is going Code+. The choice is simple: either invest in Code+, or pay more insurance every year to live dangerously (and pay again big time when disaster strikes).

8. Energy efficient, or 'green', buildings are not by definition resilient to natural hazards

Today many are confused with the meaning of the words 'green', 'sustainable' and 'resilient'. Government and environmental groups provide a communication disservice by mixing energy efficiency with hazard resilience. While both are important, in terms of priority, before you invest in green (i.e. energy efficiency), make sure you first address your hazard resilience. The latter protects the first.

The worst outcome is to lose both your home/building and its energy improvements to a hazard. Many public incentives are now offered for going green. The same, and better, should and will soon be offered for Code+.

9. Public policy has distorted property insurance markets, often stimulating greater risk taking

By keeping codes weak and regulating insurance rates, often in the name of affordability and economic development, governments make private insurance financially unattractive. As private insurers withdraw, public insurance has stepped-in to fill the gap.

The truth is that by underpricing risk, these public programs encourage and subsidize risky development. As a result, taxpayers stand to bear even greater future property loss liabilities. The only solution for both private and public insurance is to raise standards and incentivize Code+ behavior.

Proof that this really works is today's auto insurance market. It is profitable and widely available, without the need for public insurance programs,

because of higher safety standards. If we did it for cars, we can do it for homes and buildings!

10. Government cannot afford for long the escalation in disaster losses

In recent decades we witnessed a rapid increase in public outlays for disaster losses. Additional public monies are going towards fixing infrastructure, as well as buying-up private properties considered too risky to rebuild on. Furthermore, this does not include the enormous annual public spending required to maintain the emergency response capability, because we are so vulnerable to hazards.

The truth is that the days of abundant federal disaster aid are limited, and government will not be able to afford many more Katrina's and Sandy's. As a consequence, private citizens and businesses will shoulder a greater share of future hazard losses. A better use of limited government resources would become supporting incentives for private Code+ action.

11. Hazard resilience should not suffer from the polarized public discussion we see around greenhouse gases and climate change

The latter often degrades to denial rhetoric and a counter-productive 'blame game'. The truth is that for most of the past century we lived in a general state of 'hazard denial', largely ignoring the magnitude of wind, fire and water hazards assumed in our building standards and practices.

At the same time, we rapidly urbanized and developed more hazard-prone coastal, western and southern lands. Carbon-related hazards are a newcomer to the bigger hazard trend. If during the current century these do play-out as predicted, it will only worsen our already highly vulnerable condition.

"Don't simply follow the science. Better yet, follow the money!" All sides more easily acknowledge that hazard-related costs are trending alarmingly upward. Public, environmental and business interests can generally align behind a 'National Hazards Strategy' to effectively address this. While a climate adaptation plan may be part of the answer, the spotlight it has attracted can help propel a broad-based resilience movement. However, climate-change need not be forced on those who oppose it, if they are prepared to join in a broader hazard resilience effort.

12. Future valuation and finance markets will penalize physical assets with poor hazard resilience

In the coming decades, grandfathered and code-present buildings will lose value and sell at a discount, relative to Code+. Already services are emerging that will rate a building's hazard resilience for potential buyers and lenders.

Finance companies will incorporate hazard resilience in their asset risk analysis, rates and terms. Businesses will be required to disclose it in their financial and investor reporting.

As hazard risk becomes more transparent and public awareness grows, it will directly impact property values and profitability. The best counter-strategy is to invest in building, buying and owning Code+ properties.

13. You have a responsibility to consider Code+ in your next home/building purchase, upgrade or occupancy decision

Code+ means being proactive and taking the decision into your own private hands, rather than opting by default for the minimum choice prescribed by government. You do not choose minimum standards in most other parts of life: for example, your health, nutrition, education and attire. Why would you unknowingly do so in your most important asset decision, the home and building that safeguards you, your possessions and possibly your family, employees and business?

Today there is no 'one-stop' credible information source for location-specific Code+ options. Most homebuilders, brokers, inspectors, contractors or architects/engineers are too busy working within the system, rather than thinking Code+. They focus on what is most profitable or convenient for them, and only few are interested to educate consumers. Insurance resources are your best information source. The insurance industry has introduced 'Fortified' standards for multiple hazards and is training inspectors.

Codes and building experts can baffle even the experienced. However this is not rocket science, even though many make it appear so. Here are some general rules-of-thumb to help you question your hazard vulnerability. Try to know at least these 4 things about the home or building you plan to buy, build or occupy:

- a) The elevation from the nearest water body, especially if it is less than 15 feet
- b) The code wind speed (at the time it was built) compared to maximum speed recorded in your region, especially if the latter is more than 90 mph

- c) The combustibility of your primary building materials, especially if your structure is mostly made of wood.
- d) Whether the land you are on was created by fill, or sits on sand/silt, especially if your area is earthquake-prone.

Think twice about Code+ if a structure is within 15 feet elevation of a nearby active water body. Beware of wind assumptions generally set low by code, particularly east of the Rockies where tornadoes and hurricanes are prevalent. In seismic areas, check how well the structure is tied together and is reinforced; if on fill, whether the foundation is vulnerable to liquefaction. Finally, look closer at the combustibility of your building materials, especially in the absence of a fire-sprinkler system.

Don't let anyone relax you with assurances that just because a home or building has an occupancy permit and satisfies code, that it will survive a hazard.

*Remember, in the end
it's your money, your life (and business)
and your choice!*

Not some one else's, or the government's!