

Tough Topics Economic Impact of ASHRAE 90.1 Proposed 30% Increase in Stringency on Multi-Family Housing

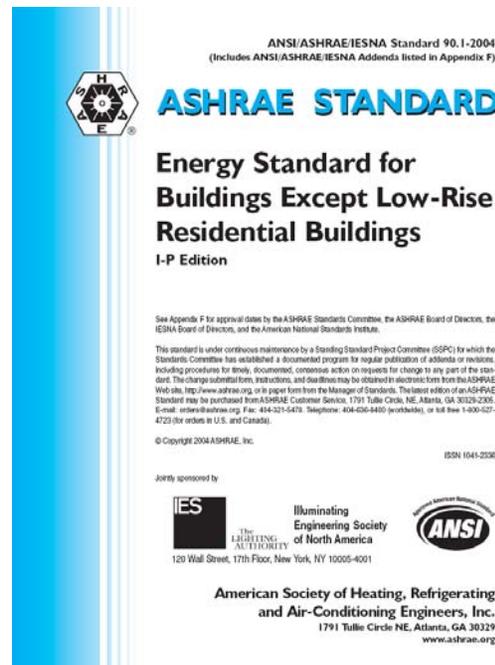
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July 26, 2007



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ASHRAE's Challenge

- In 2006, ASHRAE leadership challenged ASHRAE 90.1 committee to increase the stringency of the 2010 standard by 30% over the 2004 version.



Dilemma For Consumers

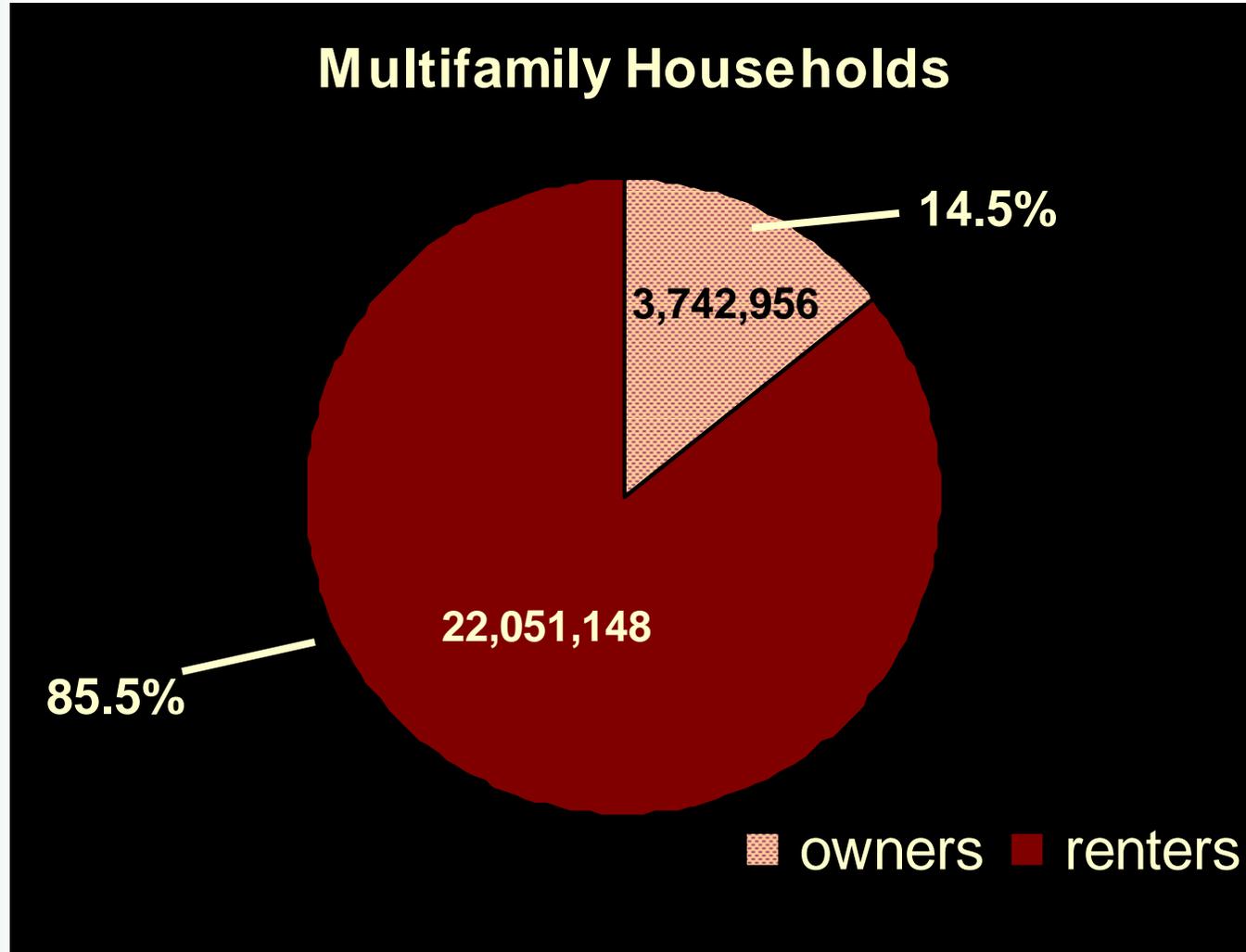
- If the stringency of the standard is not allowed to proceed naturally, there will be a negative impact on the construction industry and consumers
- By forcing the standard to achieve a specific level of stringency, cost effectiveness will be compromised, and economic market effects will increase gross rental costs for ALL consumers

Construction Costs and Multifamily Housing



- Basic supply & demand: when cost of producing a good goes up, it drives up the price of the good.
- For multifamily condominiums, higher costs are passed on to occupants directly in the form of higher prices for condos, adversely impacting affordability for home buyers.
- But a substantial share of multifamily housing is rental

A Substantial Share Of Multifamily Housing Is Rental



Source: 2005 American Housing Survey, U.S. Census Bureau and HUD

There is a Consistent Relationship Between The Price of a Multifamily Property and Rents

Rental Receipts as a Percent of Property Value		
	2-4 unit Properties	5-49 unit properties
With a Mortgage	11%	12%
Without a Mortgage	12%	12%

Source: 2001 Residential Finance Survey, U.S. Census Bureau and HUD

IMPLICATION

If construction cost per unit increases, annual rent per unit will increase by roughly 11% ($1/9$) of the incremental energy efficiency costs, or a 9 year simple payback.

In practice, how does this work?

Link Between Cost and Rents for New Construction?

- Lenders who finance the construction of rental property require a certain debt service coverage ratio (DSCR = projected net operating income / cost of servicing the debt)
- In most cases, the required DSCR is substantially over 1—i.e., rents have to be high enough to cover loan payments, plus something extra.
- If construction cost per unit increases, the loan needs to be larger to cover the cost. Rent per unit must be increased to restore the DSCR.

If Rents for New Apartments Increase, So Do Rents for Existing Units in the Area

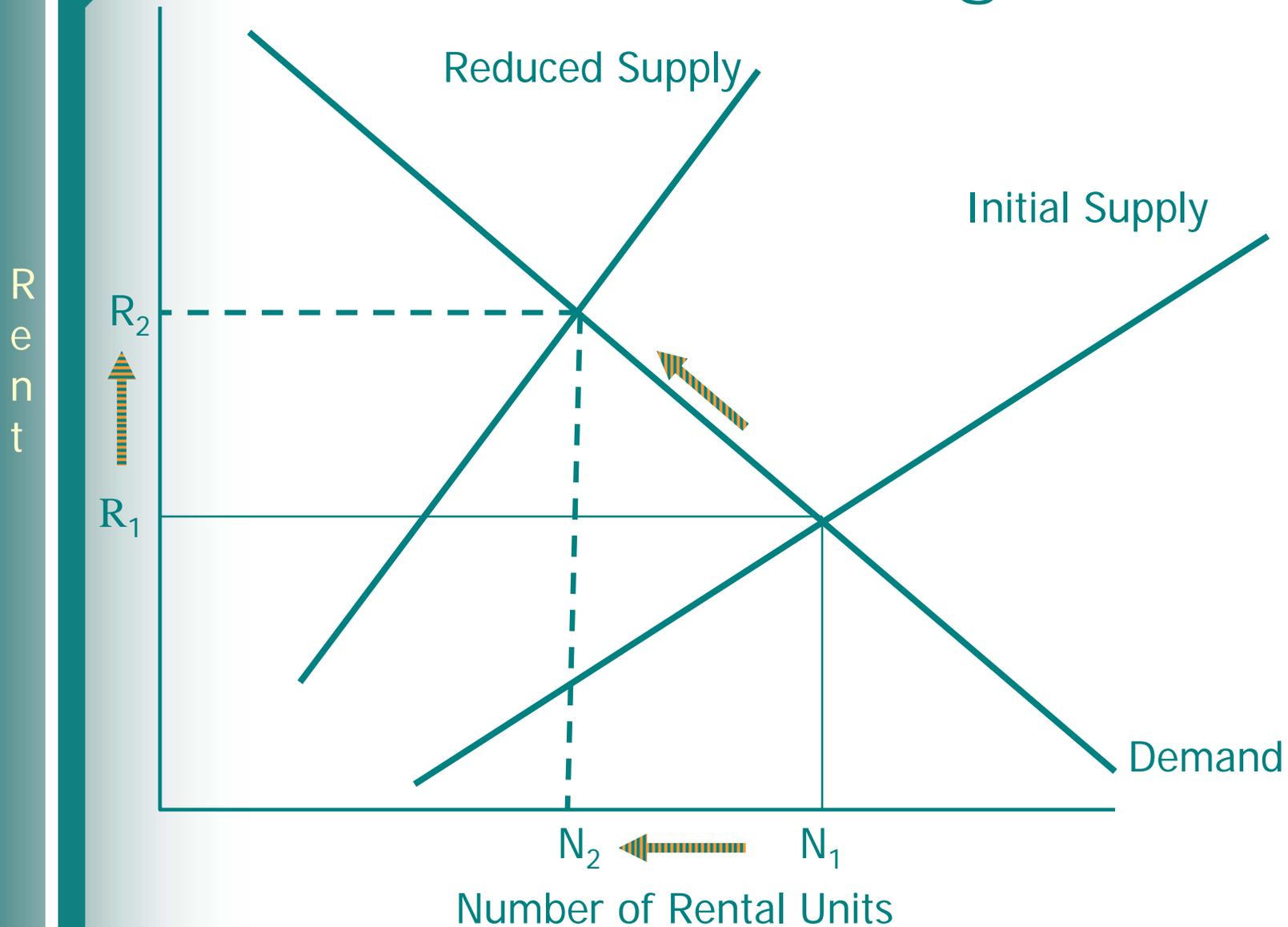
- Basic economic principle: prices of substitutes move in the same direction.
- If the cost of producing a good rises and its price increases, some consumers turn to a substitute.
- This increases demand for the substitute and drives up its price.
- New and existing rental units are substitutes.

To Build or NOT To Build...

What if Construction Costs Increase, But the Market Won't Bear Higher Rents?

- Before a new multifamily project is built, those providing equity and debt financing require a market feasibility study.
- Market feasibility based on number of households in the market area with incomes that allow them to pay the rent.
- Sometimes, higher construction costs mean the rents needed will be beyond the reach of many households in the market area, so the project will not be built.

Basic Supply and Demand: Fewer Units = Higher Rent



Slide 11

scd1 Increased Costs of Production and/or Fewer Rental Units Being Built Means Higher Rents

This is the simple outcome of costs increasing, and moving up and to the left along a downward sloping demand curve.

This outcome doesn't depend on structure of the industry. It occurs when rental housing is produced by a perfectly competitive industry, by a monopoly, or even by an industry that simply marks up price above cost without worrying about profit.

cdrumheller, 7/24/2007

The Bottom Line

- If construction cost per rental unit increase, rent per unit will be higher in the projects being built and ultimately to all existing stock.
- If a feasibility study shows the market won't bear the higher rents, the projects will not be built (reduced supply).

In either case, ALL rents in the area increase

Higher Costs = Higher Rents

Does it matter?

In practice, is anyone adversely impacted by high rents?

NAHB and others have produced many studies documenting housing affordability problems in the U.S.

NAHB Workforce Housing Study: General Conclusions

- People holding important community infrastructure jobs cannot afford homes in a donut-shaped portion of most metropolitan areas.
- The affordability differences between the unaffordable donut, and the affordable donut hole / metro edges are drastic.
- The older, more affordable neighborhoods are likely to have more deteriorated or unusable homes.

Can Reduced Utility Expenses Resulting from Energy Efficiency Compensate for Higher Construction Costs and Rents?

- The answer is yes, but the savings in utility expenses must be substantial
- Among multifamily renters who pay their own gas or electricity, average monthly gross rent is \$772. On average, 13.6% goes for utilities
- (Source: 2005 American Housing Survey, U.S. Census Bureau and HUD)
- This means the average tenant pays \$667 for rent to the property owner and \$105 for utilities.
- If construction costs and rent per unit rise by 4 percent, entire utility bill must decline by \$27—or 25 percent (27/105)—to compensate.

Multifamily Housing, Construction Costs, and Affordability: Summary

- Increased development and construction costs for multifamily housing translate into higher rents.
- High rents have led to significant housing affordability problems in many metro areas.
- Construction costs continue to be under pressure from many sources.

Example Project

- 1212 MLK in the Bronx, NY
- 54 Unit Building
- First Energy Star Multi-family building



Cost Effectiveness

- Total Project Cost- \$9.8 million
- Energy Improvement Cost- \$227,000*
- Increase in project cost of 2.3%
- Energy Reduction of 20+% to ASHRAE 90.1 (heat, cool, water heat, lights)
- Calculated 18 year simple payback*



<http://www.psdconsulting.com/download/MPPdescription.pdf>

Conclusion:

What Is a More Tenable Approach?

- Arbitrary target energy improvements to a minimum standard should not be determined without a thorough understanding of the economic impact
- Be vigilant of cost effectiveness when developing energy codes and standards
- Keep in mind that non-cost effective energy efficiency increases will price some families out of the market and create hardship on other marginal tenants

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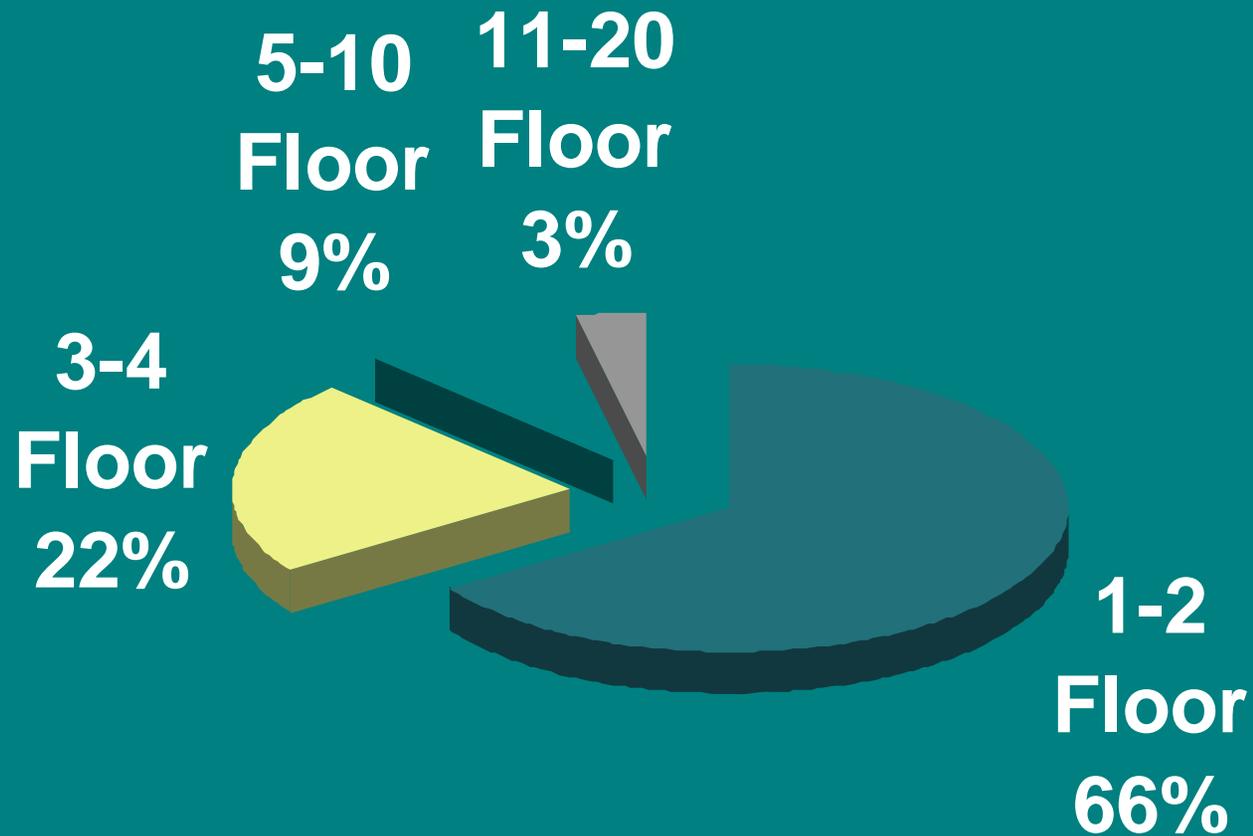
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The NAHB Research Center's mission is to promote innovation in housing technology to improve the quality, durability, affordability, and environmental performance of homes and home building products.

Multifamily Building Stories



Source: 2001 EIA