



Taking on the Tool Belt Recession

Energy Efficiency Retrofits Can Provide a Real Help for Construction Unemployment

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Introduction and summary

Today, 2.1 million construction workers are out of a job. Jobs are down 38 percent since 2006 in residential construction alone. This “tool belt recession” in the construction trades spills over to other parts of the economy as well. Because of declining demand for construction many manufacturing industry sectors that produce building products are currently operating at close to half their production capacity.

As devastating as these numbers are, however, the unemployment figures for construction are likely an understatement of the problem due to the large number of self-employed construction workers that do not show up in payroll statistics, so the jobs picture is even more urgent than even these data suggest. Further, more than 90 percent of contractors in the construction industry are small businesses—another hard-hit segment of the economy.

This memo looks at data from the Census Bureau, the Federal Reserve, and the Bureau of Labor Statistics to demonstrate the urgent conditions facing blue-collar workers in America today and to show the capacity of the home performance retrofit industry to quickly scale in creating good American jobs in construction.

This analysis clearly demonstrates that in addition to having an employment pool in construction that is ready to move quickly, the product manufacturers serving the industry have significant unused production capacity as well. So if demand for building products were to rise, U.S. manufacturers would quickly respond by putting laid off employees back to work.

U.S. unemployment, August 2007 to December 2009

U.S. construction industry sees higher unemployment than national average



Source: Home Performance Resource Center.

Labor constitutes a very significant share of any remodeling job, but more than half of every dollar spent also flows to retail and manufacturing through product purchases. This means a program that incentivizes new construction investment through energy improvements would create jobs not only within the construction industry directly, but in retail, manufacturing, and other local economic activity as well.

Understanding the tool belt recession

If you want to understand why Americans are uneasy about the future, take a look at what's happening to construction workers in communities nationwide. While the U.S. unemployment rate finally dipped below 10 percent in January, construction industry unemployment actually jumped to 25 percent. If the economy as a whole, and the labor market in particular, is weak, for workers in the construction trades and the manufacturing and retail industries that support them the situation is far more bleak.

The construction industry has suffered especially hard in this economic downturn, caught as it is in an economic vise between a financial crisis that has dried up lending for commercial real estate, and the collapse of a housing bubble that has seen foreclosures skyrocket as housing prices fall.

The tool belt recession by the numbers

Jobs in the construction sector and related industries are suffering more compared to other parts of the economy, resulting in sustained high unemployment and significant available manufacturing capacity. Consider the following:

Construction jobs

- The unemployment rate for experienced workers in construction was 24.7 percent in January 2010.
- Total construction payroll employment has dropped by 2.1 million jobs since 2006, with residential construction down by 1.3 million, or 38 percent.
- For 2009, 12.4 percent of all unemployed workers were previously employed in the construction industry.
- There have been 134,000 jobs lost (10 percent) in construction-related retail such as building supply stores and lumber yards since December 2007, with 186,000 lost (14 percent) since July 2006.

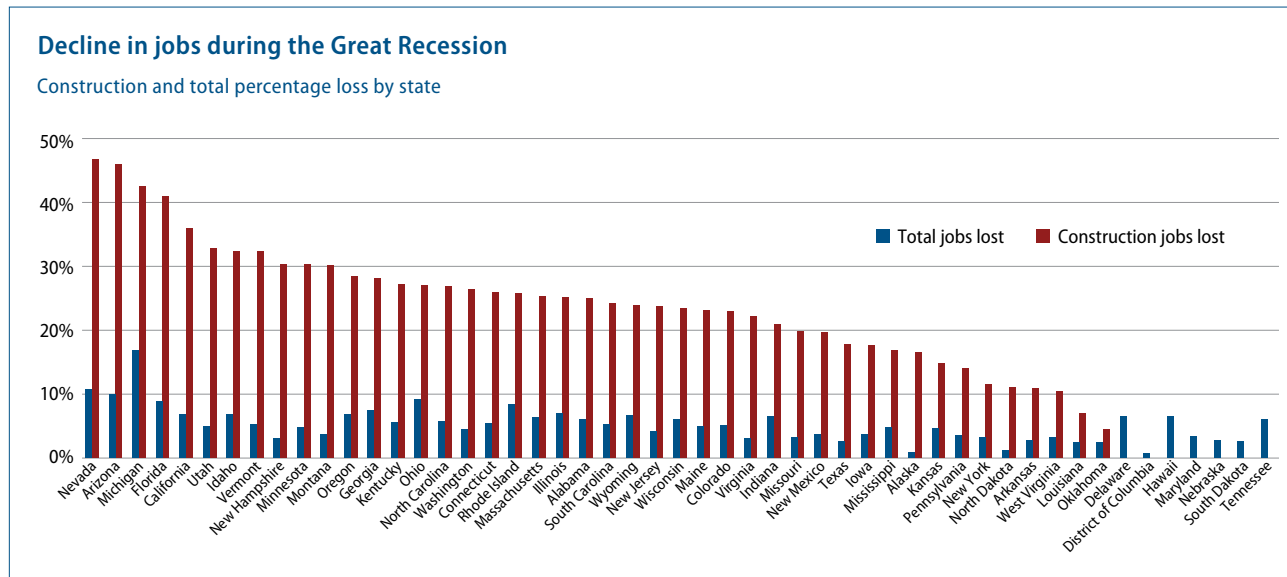
Manufacturing jobs

- Manufacturing employment has dropped 16 percent since the recession began, but the numbers are far worse in construction-related manufacturing, including:

- Nearly 30 percent employment declines in wood products (148,000 jobs lost)
 - A close to 22 percent fall off in nonmetallic minerals jobs, such as window glass, gypsum products, and fiberglass insulation (107,000 jobs lost)
 - Nineteen percent of jobs in fabricated metals have disappeared, such as ductwork, metal windows, and doors (291,000 jobs lost), and 19 percent of jobs in HVAC equipment as well (19,000 jobs lost)
- Overall “capacity utilization” in manufacturing—or the rate at which plants are operated compared to their potential—was 68.9 percent in December 2009. It was far worse for construction-related industries, with many operating at barely half their capacity, including wood products (51.5 percent), nonmetallic mineral products (54.0 percent), and fabricated metal products (63.9 percent)
 - The vast majority of manufactured products and raw materials used in residential alterations and repairs are produced domestically, so the dollars spent on remodeling homes and buildings circulate primarily through the U.S. economy. In many categories of building materials the rate of domestic production is well over 90 percent.

Construction job loss: A view from the ground

For this memo we looked at the decline in employment during the current recession, measuring the decline from recent peak construction employment through December 2009, to examine the severity and broad distribution of current job losses in the construction industry.



Source: Data from Bureau of Labor Statistics Employment Data. Individual state data was not available for Delaware, District of Columbia, Hawaii, Maryland, Nebraska, South Dakota, and Tennessee. Note that the job loss data date varies by state as each state may have a different date for peak employment. The calculations were prepared from individual state peaks to December 2009.

Forty-two of the 44 states with available data had seen job losses in excess of 10 percent of total construction jobs, 31 states had lost more than 20 percent of their construction jobs, 11 states had seen construction jobs drop by more than 30 percent, and four states had even seen a decline in construction employment of more than 40 percent of total jobs since the last peak in construction employment. In the seven states where reliable state-level numbers could not be determined, the overall trend of substantial job loss in construction, well above national averages for all industries, appeared to be very consistent.

This shocking drop in construction industry jobs, which we call the “tool belt recession,” deserves specific attention and an urgent policy response. It is hard to foresee a robust economic recovery on the ground in communities when these near-depression-level conditions persist within local construction job markets.

Residential construction, including remodeling, typically declines before the overall economy enters a recession, and it experiences greater relative declines than other sectors.¹ That has been especially true in the current episode. But investment in residential construction also tends to recover before the overall economy, leading the way out of recession. In the current recovery, however, residential investment’s role as an engine of recovery has been missing.

Construction and construction-related industries have shed many jobs during this recession. From the national peak in the spring of 2006, payroll employment in residential construction declined from 3.45 million (seasonally adjusted) to 2.15 million, or nearly 38 percent (Table 1). Overall employment did not reach a peak until December 2007 and declined by 6 percent (from 138 million to 129.5 million).

The chart above (and Table 1 in the appendix) breaks down declines in construction employment by state from peak levels to December 2009. Some states show considerably higher construction job losses than the overall national decline of 26.2 percent. States particularly hard hit include California (-36.1 percent), Florida (-41 percent), Michigan (-42.6 percent), Arizona (-46.1 percent), and Nevada (-46.8 percent). California, Florida, and Texas shed more than 750,000 construction jobs combined since peak employment levels.

Employment in producing and distributing building materials also fell by more than overall employment in manufacturing and trade. Since December 2007 the total number of jobs in retail trade fell by 7.5 percent, but the decline during that period for building materials and garden supply stores was 10.4 percent. Employment in the wholesale trade sector, who supply those retail outlets, also declined by 22.5 percent for construction supplies compared to only 8.1 percent overall. The specific impact of job loss on industries connected to buildings and construction is undeniable and stands out starkly even in an otherwise weak national economic picture.

Similarly, manufacturing experienced widespread job losses, with an employment decline of 15.9 percent since December 2007. But construction-related manufacturing fell even more, with declines of 29.8 percent in wood products, 21.9 percent in nonmetallic minerals (including window glass, gypsum products, and fiberglass insulation), 18.7 percent in fabricated metals (ductwork, metal windows, and doors), and 19.3 percent in HVAC equipment.

Housing starts stabilized in recent months—at the lowest rate of production since World War II—but employment in residential construction and related industries continues to decline due to the lag between housing starts and completions. Moreover, growing weakness in nonresidential building construction of commercial buildings, and a growing financial crisis in commercial real estate, will likely to continue to produce further employment declines in construction for some time to come.

Counting job loss for self-employed construction workers

Unfortunately, because of the large self-employed construction workforce, the decline in jobs shown by the payroll statistics understates the total loss of jobs. Economic Census data shows that the self-employed share of workers is significantly higher in the construction industry than in other sectors, at 16.6 percent in 2008.²

The construction industry is highly fragmented and relies much more heavily on flexible labor markets than on capital equipment assets. This industry organization facilitates downsizing when demand falls but allows rapid expansion during recovery.

The industry includes general contractors, who organize complex projects and span a variety of functions, and special trade contractors, who perform specific types of work such as roofing or plumbing. Special trade contractors perform the vast majority of actual job-site production, whether for new construction or for alterations and repairs to existing structures. Many of these subcontractors are self-employed and tend to be undercounted in official job loss numbers.

General remodeling contractors, who direct work spanning several specialties, are more likely than new home builders to have construction workers as payroll employees, but even in remodeling, most production is subcontracted. Similarly, although some home centers and other retailers offer construction, installation, and home repair services, that work is also typically subcontracted.

Special trade contractors may be moderately large enterprises—with more employees than the general contractors they serve—but most are small businesses or self-employed independent contractors. For alterations and repairs to existing homes, the self-employed share is higher than the industry average because other construction segments such as bridge building have fewer self-employed workers.

Not all self-employed workers in the industry are individuals working on their own. Many are proprietors of unincorporated businesses with payroll employees. As a result, job loss data underreports the extent of the current jobs crisis and targeted efforts to help construction can have a very large ripple effect across local economies.

Construction jobs and small businesses

Looking closely at the specialty trades that perform energy retrofits reveals that the job losses mentioned above disproportionately affect small businesses as well. Analysis conducted by the Energy Future Coalition shows very high rates of small business participation in construction:

- Insulation, for example, is installed by more than 22,000 firms, 85 percent of which employ less than 20 people.³
- The specialty trade of roofing insulation is also installed by nearly 20,000 contractors around the country, 88 percent of which employ less than 20 people.
- Windows are manufactured and installed by more than 130,000 people working for nearly 7,000 firms in the United States, 82 percent of which employ less than 20 people.
- The production and installation of HVAC equipment employs around 2 million people in the United States, and nearly 90 percent of them work for firms of less than 20 people.
- Nearly 850,000 people manufacture or install interior or exterior lighting equipment in the United States—nearly 90 percent of whom work for firms of less than 20 people.

Jumpstarting demand for manufacturing

There are currently large amounts of unused or underused capacity in labor markets and production facilities across America due to declines in both residential and nonresidential construction.

For instance, the unemployment rate for experienced construction workers was 24.7 percent in January 2010. Although that figure partly reflected seasonal factors, the average for 2009 was 19.1 percent, and the latest figure was 6.5 percentage points higher than in January 2009.

Lower capacity utilization rates translate into assembly lines that are lying idle, shifts that are not being worked, and large swaths of the workforce that have been furloughed or laid off. The overall capacity utilization rate in manufacturing was only 68.9 percent in

December 2009 according to the Federal Reserve Board (see Table 2 in the appendix), meaning that nearly a third of our industrial capacity went unused. But it was even lower in some industries where we were putting barely half of our industrial capacity to use nationwide. This translates into rates of 51.5 percent for wood products, for example, 54.0 percent for nonmetallic mineral products, and 63.9 percent for fabricated metal products.

The Federal Reserve monthly data on capacity utilization does not provide more detailed industry categories, but housing-related manufacturing is undoubtedly operating at even lower levels of capacity. Quarterly data with more detail from the Census Bureau show capacity utilization for paint, coatings, and adhesives (Northern America Industry Classification System 3255) at 56.7 percent in the third quarter of 2009 even though overall capacity utilization for the chemical industry group (NAICS 325) was around 72 percent.

What can be drawn from this data is that in addition to having an employment pool in construction that is ready to move quickly, the product manufacturers serving the industry have significant unused production capacity as well. If demand for building products were to rise, U.S. manufacturers would quickly respond by putting laid off employees back to work.

Building demand for jobs through home energy retrofits

Looking across the current economic landscape, there are few areas where construction industry jobs seem poised to grow. There is one significant exception, however, in the area of energy efficient retrofits of our nation's building stock. A program that incentivizes energy improvements would rapidly create jobs within the construction industry directly, and in retail, manufacturing, and local economic activity as well.

Much of the improvement and repair costs for existing homes consist of labor and related costs performed on the job. But more than half of spending on home energy efficiency retrofits goes toward the cost of materials, distribution, and other purchased services. Of each dollar spent on alterations and repairs, about 9 percent goes directly to retail trade and about 3 percent to wholesale trade (for those products purchased by contractors directly from wholesalers).

The share of residential remodeling, as well as other residential construction, that flows to and through retail trade is much larger than for other businesses, which may only obtain office supplies and other minor items through retail outlets. In part that reflects the uneven demands and fragmented structure of the industry. As a result, a construction crisis turns quickly not only into a crisis in manufacturing supply chains but becomes a crisis for retail and wholesale businesses as well.

Building materials retailers also provide services that go far beyond restocking shelves and ringing up purchases. Building materials retailers—including home centers, lumber yards, appliance dealers, hardware stores, and other specialty outlets—cut and fabricate

products to specifications, deliver to job sites, handle special orders, track down obscure products and parts, and often extend credit. In other words, the impacts of a contraction in construction jobs deeply affect the broader local economy. But this also means that a program to expand demand for local construction jobs through retrofits would have far-reaching direct local benefits.

For state-of-the-art, high-energy-performance building components and mechanical systems—such as ultra-efficient heating, air conditioning, and water heating equipment—as well as for insulated ducts and premium windows, the components represent a larger share of the installed cost. Onsite labor, while not reduced, accounts for a smaller proportion of these jobs. Moreover, in the manufacture of such products, the amount of material used is greater than for standard-quality goods. For these areas of building retrofits, relative to weatherization activities such as air sealing, more employment would be created in manufacturing and in the supply chain rather than at the job site.

It is also worth noting that the vast majority of the manufactured products and raw materials used in residential alterations and repairs are produced domestically. This means construction industry jobs by their very nature disproportionately support American industries and workers.

Responding to the tool belt recession with retrofit jobs

There are more than 2 million unemployed workers in construction and construction-related industries sitting on the sidelines in today's economy who need jobs that put their skills to use. The burgeoning home performance industry, which retrofits buildings to improve total energy efficiency and save consumers money, represents a massive and cost-effective opportunity to redeploy our nation's workforce and promote energy independence while addressing the need to cut energy bills, waste, and pollution.

The Center for American Progress has estimated that cutting energy use by 20 to 40 percent in just 40 percent of America's building stock would create 625,000 sustained jobs over a decade and drive half a trillion dollars of new investment into the built environment, while saving as much as \$64 billion every year on energy bills that consumers could spend in other ways. Retrofitting homes for efficiency is not just a matter of smart energy policy—it is also a bright spot in a weak economy where we can quickly jumpstart investment to get contractors hiring again.

Smart public policy can help overcome current barriers to private investment in more energy efficient buildings and jumpstart jobs and growth in the construction trades and supporting industries. Currently, Congress is considering HOME STAR, a program of consumer incentives that provides a rebate to homeowners who invest directly in improving energy efficiency. HOME STAR would give homeowners a direct rebate when they

buy a new efficient hot water heater, furnace, or air conditioning system, and it could cut the cost nearly in half of replacing leaky windows, sealing duct work, and insulating attics for millions of American homes. Building consumer demand for energy retrofits through HOME STAR will not only give consumers a rebate of as much as \$3,000 to \$8,000 and long-term savings on their energy bills, but it will create new demand for construction jobs, putting contractors back to work.

HOME STAR would be fast acting and use the existing marketplace to deliver retrofits to consumers with a minimum of new government overhead. It also builds a well-trained workforce and expands consumer demand for high-quality retrofits that provide guaranteed energy savings of 20 percent or more off existing energy bills. This is a policy that works rapidly to create urgently needed jobs today, even as it builds the robust industry that we will need for the future.

For maximum jobs benefits, federal policy should also target retrofits in commercial buildings through a Building Star program that increases investment in high-performance office buildings. These should likewise be matched incentives for industrial energy efficiency retrofits. A national strategy to reverse the tool belt recession should lead with a HOME STAR program for residential homeowners. There are other important job creating policies under consideration today that would jumpstart the market for energy saving retrofits in both commercial and industrial buildings as well, and increase access to financing for retrofit jobs to speed the growth of these markets.

Current unemployment levels in the building and construction trades have reached crisis proportions. It is time for a national program to roll back these job losses and put hard-working Americans in the construction industry back on the job, rebuilding America for a clean-energy future that saves consumers money, improves health and comfort, and creates lasting value in our communities.

Appendix

TABLE 1
Payroll employment—Construction

BLS Current Employment Statistics by state, in thousands, seasonally adjusted

	Peak	Month	December 2009	% Change
United States	7,725.0	Aug-06	5,700.0	-26.2%
Alabama	113.7	Sep-07	85.2	-25.1%
Alaska	19.1	Apr-05	15.9	-16.8%
Arizona	244.8	Jun-06	132.0	-46.1%
Arkansas	57.6	Sep-06	51.2	-11.1%
California	948.5	Feb-06	606.5	-36.1%
Colorado	169.6	Mar-01	130.4	-23.1%
Connecticut	69.4	Oct-07	51.3	-26.1%
Florida	686.3	Jun-06	405.1	-41.0%
Georgia	223.9	Mar-07	160.8	-28.2%
Idaho	53.2	Jun-06	35.9	-32.5%
Illinois	280.4	Oct-02	209.8	-25.2%
Indiana	153.0	Dec-06	120.9	-21.0%
Iowa	76.4	Feb-06	62.8	-17.8%
Kansas	66.7	Nov-07	56.8	-14.8%
Kentucky	89.3	Jun-01	64.8	-27.4%
Louisiana	143.8	Feb-09	133.5	-7.2%
Maine	31.8	Mar-04	24.4	-23.3%
Massachusetts	143.6	Apr-06	107.0	-25.5%
Michigan	207.4	Mar-01	119.0	-42.6%
Minnesota	132.2	Feb-06	91.9	-30.5%
Mississippi	63.5	May-08	52.7	-17.0%
Missouri	149.8	Feb-06	119.9	-20.0%
Montana	32.9	May-07	22.9	-30.4%
Nevada	145.8	Feb-06	77.6	-46.8%
New Hampshire	30.1	Nov-05	20.9	-30.6%
New Jersey	177.1	Apr-06	134.8	-23.9%
New Mexico	59.6	Sep-06	47.8	-19.8%
New York	363.9	Aug-08	321.3	-11.7%
North Carolina	256.1	Jun-07	187.1	-26.9%
North Dakota	22.2	Jul-09	19.7	-11.3%
Ohio	242.1	Aug-01	176.4	-27.1%
Oklahoma	77.0	Oct-08	73.5	-4.5%
Oregon	105.2	Mar-07	75.1	-28.6%
Pennsylvania	264.7	Jan-07	227.1	-14.2%
Rhode Island	23.8	Jan-07	17.6	-26.1%
South Carolina	127.4	Oct-06	96.3	-24.4%
Texas	676.8	Apr-08	555.8	-17.9%
Utah	104.9	Jun-07	70.3	-33.0%
Vermont	17.6	Mar-06	11.9	-32.4%
Virginia	251.8	Mar-06	195.6	-22.3%
Washington	211.4	Jun-07	155.5	-26.4%
West Virginia	40.6	Dec-06	36.3	-10.6%
Wisconsin	129.6	Feb-06	99.1	-23.5%
Wyoming	28.7	Aug-08	21.8	-24.0%
Residual				
7 Missing States	536.9	Apr-07	217.8	-59.4%
Adjusted for ss v nat	507.9	Mar-08	269.2	-47.0%

Adjustment factor US/Sum for total employment

TABLE 2
FRB capacity utilization—December 2009

Industrial production and capacity utilization, seasonally adjusted

Total index	72.0
Manufacturing (NAICS)	68.8
Durable manufacturing (NAICS)	61.8
Wood product NAICS=321	51.5
Nonmetallic mineral product NAICS=327	54.0
Primary metal NAICS=331	58.9
Fabricated metal product NAICS=332	63.9
Machinery NAICS=333	59.1
Computer and electronic product NAICS=334	63.5
Electrical equipment, appliance, and component NAICS=335	69.5
Motor vehicles and parts NAICS=3361-3	52.1
Aerospace and miscellaneous transportation eq. NAICS=3364-9	75.5
Furniture and related product NAICS=337	58.8
Miscellaneous NAICS=339	68.7
Nondurable manufacturing (NAICS)	76.5
Food, beverage, and tobacco NAICS=311,2	77.9
Textiles and products NAICS=313,4	63.2
Apparel and leather goods NAICS=315,6	67.5
Paper NAICS=322	74.6
Printing and related support activities NAICS=323	68.3
Petroleum and coal products NAICS=324	82.0
Chemical NAICS=325	76.0
Plastics and rubber products NAICS=326	69.9
Other manufacturing	62.6

Endnotes

- 1 For a discussion of the relationship of housing to economic cycles, see Edward E. Leamer, "Housing *is* the Business Cycle" (Federal Reserve Bank of Kansas City, 2007), available at www.kansascityfed.org/publicat/sympos/2007/PDF/Leamer_0415.pdf.
- 2 Bureau of Labor Statistics, "Household Data: Annual Averages" (2009), available at <http://www.bls.gov/cps/cpsaat16.pdf>.
- 3 Unless otherwise noted, all employment, firm, and size figures come from "2007 Census County Business Patterns report," available at <http://censtats.census.gov/cgi-bin/cbpnaic/cbpdetl.pl>.

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About the Home Performance Resource Center

The Home Performance Resource Center is a national 501(c)(3) nonprofit organization formed to conduct public policy and market research in support of the Home Performance industry. HPRC develops research materials for policymakers, energy program managers, and industry leaders to promote job creation, economic recovery, lower household energy bills, and deep reductions in residential carbon emissions through improved home energy efficiency. It is the goal of the Home Performance Resource Center to give professional contractors a voice in shaping public policy and setting smart standards for contractor and rater certification, business practices, energy retrofit performance, loading order, and other factors that will assure successful implementation of home energy retrofit initiatives nationwide.

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