The Imminent Commercial Real Estate Crisis and The CRE Solution

Architecture 2030

May 28, 2010

Update

July 15, 2010

After careful research and consultation with Building Sector leaders, Architecture 2030 is recommending that the 3-year tax deduction proposed in the CRE Solution, be tradeable and fully transferable (saleable) to a new owner for the life of the deduction. This would bring Energy Service Companies (ESCO's) and Architecture/Engineering/Construction (A/E/C) firms into the CRE efficiency renovation market, and allow Real Estate Investment Trusts (REIT's), pension funds, and properties with complex ownerships to participate more easily.

It should be noted, that for each $1 sf/yr (per square foot, per year) of energy saved, a commercial building will increase in value about $11.75 per square foot at a capitalization rate of 8.5%. For example, if a building owner of a 10,000 square foot building saved $10,000 on annual energy expenses, the building would increase in value $117,500.

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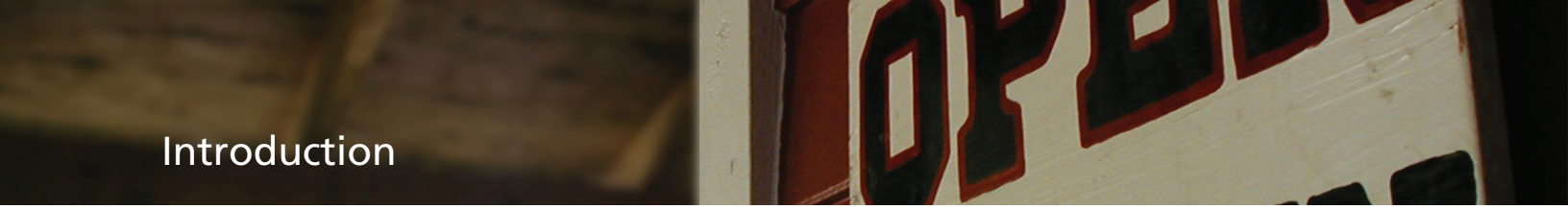

Introduction

Without swift intervention, the commercial real estate (CRE) crisis will cripple the economic recovery, raise unemployment, and lead to scores of small business and community bank failures. To avert this crisis, Architecture 2030 recommends that Congress implement the 'CRE Solution', providing a tax deduction tied to specific energy reduction targets that will create 1.3 million jobs while restoring credit capacity and liquidity in the CRE market.

Problem Summary

CRE transactions have dropped a staggering 90% since 2007. Between now and 2014, $1.4 trillion in CRE loans will be coming due; half of these currently are underwater. Commercial property values have plummeted by more than 40%, and commercial vacancies continue to increase. In addition, the construction industry has lost over two million jobs. Construction unemployment now stands at 21.8%. Finally, current CRE government intervention programs simply will not avert the CRE crisis because they do not target the largest sector of the CRE market – small and medium-sized CRE properties and businesses.

The CRE Solution

To restore credit capacity and liquidity in the CRE market while decreasing building operating costs and creating 1.3 million construction-related jobs, Architecture 2030 recommends implementing the CRE Solution. The CRE Solution would amend the Energy Efficient Commercial Building Tax Deduction (26 U.S.C. 179(d)) from $1.80 per sq.ft. to a range of $3.00 to $9.00 per sq.ft. for meeting the energy reduction targets of the 2030 Challenge[1], as follows:

Existing Building Renovations

3-Year	Minimum Energy Reduction Target
Maximum annual tax deduction per square foot of floor area	Percentage better than ASHRAE 90.1-2004
$4.50	30%
$6.00	50%
$7.50	75%
$9.00	Zero-Net-Energy

New Building Construction

3-Year	Minimum Energy Reduction Target
Maximum annual tax deduction per square foot of floor area	Percentage better than ASHRAE 90.1-2004
$3.00	30%
$4.50	50%
$6.00	75%
$7.50	Zero-Net-Energy

For each $6 billion of deferred CRE tax revenue, the CRE Solution would generate $73.4 billion in new private spending, and $15.9 billion in new federal tax revenue, more than paying for itself.

The CRE Solution Impact

- Creates 1.3 million jobs, quickly, and cost-effectively,
- Increases after-tax cash flow and property values, and reduces loan defaults,
- Increases CRE desirability and investment value,
- Increases new CRE sales (narrows the gap between the bid and ask price of CRE property),
- Decreases building energy consumption, greenhouse gas emissions, and operating costs, and
- Generates billions of dollars in federal, state, and local tax revenue.

[1] The 2030 Challenge®, issued by Architecture 2030, calls for incremental building energy reductions of 50% below the regional average for each building type (30% below ASHRAE 90.1-2004) to carbon neutral or zero-net-energy by the year 2030.

Understanding the Crisis

According to a recent report by the Congressional Oversight Panel[2], "Between 2010 and 2014, about $1.4 trillion in commercial real estate loans will reach the end of their terms. Nearly half are at present "underwater" – that is, the borrower owes more than the underlying property is currently worth."

The Commercial Real Estate Market

The recession, with its prolonged high rates of unemployment, has led to increasing commercial vacancy rates and reduced cash flows, depressing property values. Specifically, the high rates of unemployment have led to a decrease in demand for office, retail, manufacturing, warehouse, and hotel space, as people shop less, take fewer vacations, rent less space, and save more. The National Association of Realtors[3] projects further increases in U.S. office vacancy rates from 16.3% in the fourth quarter 2009 to 17.6% in the fourth quarter 2010, as well as an increase in industrial vacancy rates from 13.9% to 14.9%, and retail vacancy rates from 12.4% to 12.7%, over that same period. With high commercial vacancy rates, rents are going down, making it more difficult for borrowers to make their loan payments. During 2010, rents are expected to decline 7.2% for office space, 9.6% for industrial space, and 2.4% for retail space. While vacancy rates for multi-family housing are expected to remain stable for 2010, rents are expected to decline 3.4%.

Because commercial real estate (CRE) loans typically have three- to ten-year terms, there is approximately $1.4 trillion in real estate property loans that will come due over the next five years and require new financing. Many of these loans were originated in the commercial boom years of 2005-2007 when property values were exceptionally high. However, since 2007, commercial property values have fallen more than 40%, resulting in higher loan-to-value (LTV) ratios[4]. As a result, building owners will have difficulty refinancing, even if their property is performing well.

The largest CRE loan losses are projected to begin in 2011 with banks facing as much as $200-$300 billion in losses. These losses will fall disproportionately on smaller regional and community banks, many of which are FDIC insured and have high concentrations of CRE loans. Because these banks play a critical role in providing capital to small businesses and new business start-ups, their failure could undermine the economic recovery, leading to further unemployment and greater economic instability[5]. Also, many banks are now reluctant to trade CRE loans and incur losses or to foreclose, choosing instead to extend loan maturities[6]. This in turn limits their ability to make new business loans, slowing the nascent economic recovery. Financial institutions are literally stuck holding illiquid assets, the value of which cannot be easily determined because relatively few CRE transactions are taking place. According to Ernst & Young, only $54.5 billion in CRE transactions were posted in 2009, compared with $557.8 billion in 2007, a drop of over 90%[7].

Another critical factor that must be considered when analyzing the CRE market is its relationship to the commercial building and construction industry. Because of their interdependency, negative circumstances in either can quickly translate to the other, creating a negative feedback loop that drags both down at an accelerated rate.

The Construction Industry

The construction industry is key to the economic health of America. Virtually every U.S. industry – from steel, concrete, insulation, caulking, mechanical and electrical equipment, solar systems, glass, wood, metals, tile, fabrics, and paint to architecture, planning, design, engineering, banking, development, real estate, manufacturing, construction, wholesale, retail, and

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[2] Congressional Oversight Panel. *February Oversight Report: Commercial Real Estate Losses and the Risk to Financial Stability*. Washington: Government Printing Office, February 2010. http://cop.senate.gov/reports/library/report-021110-cop.cfm.

[3] The National Association of Realtors. (2010, February 23). *No Meaningful Recovery in Commercial Real Estate Before 2011*. http://www.realtor.org/press_room/news_releases/2010/02/commercial_recovery.

[4] Congressional Oversight Panel. *February Oversight Report: Commercial Real Estate Losses and the Risk to Financial Stability*. Washington: Government Printing Office, February 2010. http://cop.senate.gov/reports/library/report-021110-cop.cfm.

[5] Ibid.

[6] Ernst & Young LLP, *More Pain, Some Gain for Real Estate Private Equity Sector in 2010*. Business Wire, http://www.businesswire.com/portal/site/home/permalink/?ndmViewId=news_view&newsId=20100406007069&newsLang=en.

[7] Grinis and Seyfarth, Ernst & Young LLP, *Is History Repeating Itself?, U.S. distressed real estate loans investor survey*, 2010. http://www.ey.com/Publication/vwLUAssets/Is-history-repeating-itself/$FILE/Is_history_repeating_itself.pdf.

distribution – depends on the demand for products and services generated by the construction industry. Yet, this industry is mired in the worst downward economic spiral since the Great Depression[8].

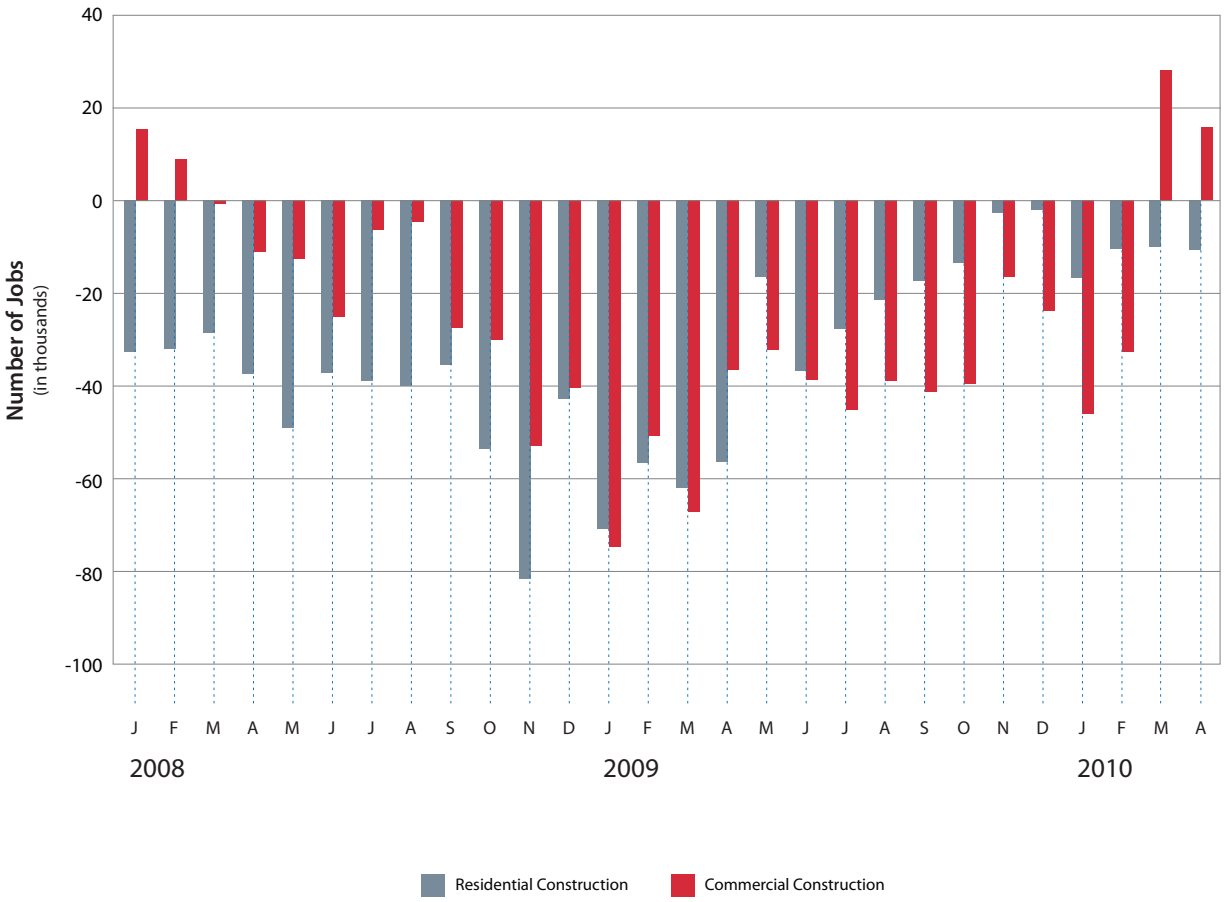
The depth of the construction industry crisis is sobering. The industry has lost over two million jobs since August 2007. Construction unemployment hovers at 21.8% with more than one in five construction workers out of work. In 2008, most construction job losses were concentrated in the residential building sector. By early 2009, commercial (non-residential) and heavy construction job losses began to surpass residential job losses, and since May 2009, most construction job losses have occurred in the commercial building sector (Figure 1)[9].

Over the past 12 months, the construction industry has lost an average of 46,000 jobs per month (Figure 2). In an attempt to keep their businesses open, many contractors are taking a loss on projects; thousands of others are going bankrupt or shutting down.

An important and perhaps overlooked result of these dire conditions is that the industry is experiencing a consequential loss of skilled labor. Many of our nation's most highly skilled designers and construction workers are leaving the building industry to move into new careers, and may never return. The extraordinary structures designed and built by U.S. professionals and labor and found throughout our nation stand as a testament to the significance of losing such highly trained and skilled workforce. If the downward spiral of

Figure 1: Monthly Job Losses or Gains in Construction

Source: U.S. Department of Labor



[8] Davidson, P. (2010, February 25). Construction unemployment still on the rise. *USA Today*. http://www.usatoday.com/printedition/money/20100225/construction25_st.art.htm.

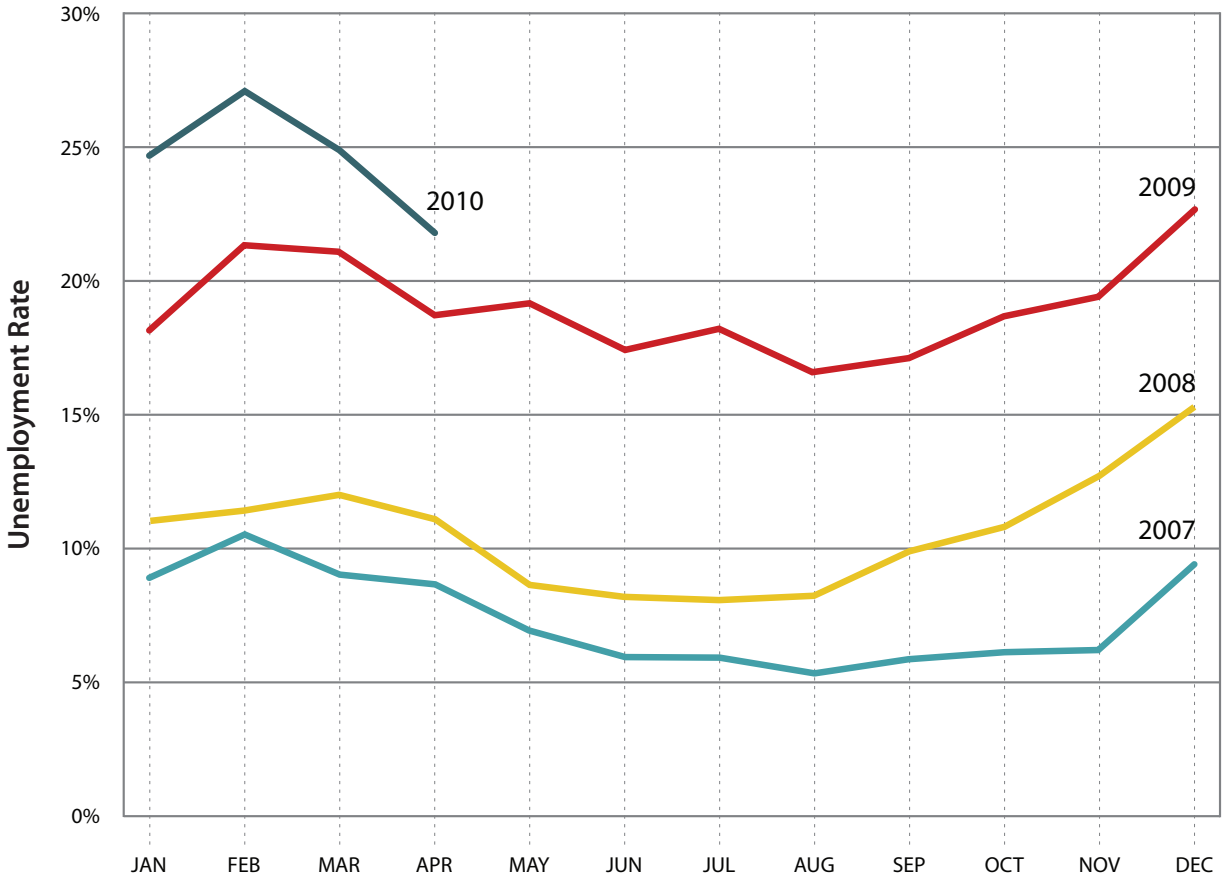
[9] Department of Labor. Bureau of Labor Statistics. Employment Situation Summary. ONLINE. 5 March 2010. Bureau of Labor Statistics. Available: http://www.bls.gov news.release/empsit.nr0.htm.

this industry is not reversed soon, it will take years for the industry to recover from such a loss.

The building industry, already under siege, is now faced with a potential meltdown in the commercial real estate market. With commercial property depressed, vacancy rates increasing, and commercial building financing frozen, the current trend of construction job losses is expected to continue and further exacerbate the CRE crisis[10]. If this meltdown is not averted, the negative feedback loop that has already begun will continue to accelerate, affecting not only the stability of the economic recovery, but, according to the report issued by the Congressional Oversight Panel on February 10, 2010, the nation's financial system, as well[11].

Figure 2: Construction Unemployment Rate (2007-2010)

Source: U.S. Department of Labor



[10] Ratiu, G. (2010, February). National Association of Realtors. *Commercial Real Estate Outlook: Commercial Real Estate Faces Another Difficult Year.*

[11] Congressional Oversight Panel. *February Oversight Report: Commercial Real Estate Losses and the Risk to Financial Stability.* Washington: Government Printing Office, February 2010. http://cop.senate.gov/reports/library/report-021110-cop.cfm.

The Current Response

The Financial Regulators and Administration have begun to address pending CRE loan losses. On October 30, 2009, regulators issued a "Policy Statement on Prudent Commercial Real Estate Loan Workouts". This policy adjustment eases existing bank regulations by allowing banks to pursue 'prudent' loan workouts, such as loan renewals or extensions to creditworthy customers, extension of additional credit, or a loan restructuring with or without concessions [12].

Also, on February 5, 2010, the President outlined a plan [13] to expand the Small Business Administration's (SBA) 504 program to temporarily allow for the refinancing of owner-occupied commercial real estate loans that are not underwater. Businesses would be eligible to refinance up to 90% of a property's current value up to a maximum of $5 million. However, the President's proposal would only help refinance a maximum of $18.7 billion each year in commercial real estate that might otherwise be foreclosed and liquidated, a very small fraction of potential distressed properties.

Legislation that is less ambitious than the President's proposal has been introduced in the House (H.R. 4302) and Senate (S. 2869). This legislation would allow businesses to finance, through the SBA, only a maximum of 80% of a property's current value.

Developing an Effective Response

Today, the most effective means for thawing and stabilizing the CRE market is to provide incentives to increase building owner cash flow and property values and the financial attractiveness of commercial property, encouraging transactions and narrowing the large spread between the current bid and ask price for commercial property. Due to our continuing high unemployment rate, any federal incentives should also be used as an opportunity to create jobs. Simply put, without more jobs, the markets cannot recover and the risk of additional defaults created by maturing commercial real estate loans will only worsen.

The most effective job creation mechanism in the CRE market is widespread demand for building construction services, i.e. building construction and renovation. However, due to increasing vacancy rates, job creation should primarily focus on generating a greater demand for construction renovation and additions. By focusing on energy efficiency renovations and additions, other critical changes needed in the CRE market can also be realized, including lower operating costs and increased property values.

Renovation: A More Stable Market

In addition to spurring job creation, focusing on expanding the commercial renovation market is advantageous for another reason. This market tends to be less responsive to economic changes than the new building construction market, which is more volatile, responding to the ups and downs of the economy (Figure 3). In contrast to new buildings, the value of commercial renovation has remained fairly constant throughout the recession [14]. Over the past five years, from 2005 through 2009, commercial building renovations and additions have averaged $73.4 billion, totaling $69.1 billion in 2009. This provides a substantial existing and stable market for incentives, since it is much easier to conduct additional renovation work and add new space when construction is underway than it is to initiate new construction work.

Energy Efficiency Renovation and Federal Policy

In addition to lowering building operating costs and increasing owner income and property values, focusing on energy reductions aligns with current federal energy and climate policy as established by Congress in the Energy Independence and Security Act of 2007, the American Clean Energy and Security Act (H.R. 2454) passed by the House, and the American Clean Energy Leadership Act (S. 1462) passed out of committee in the Senate in 2009. *By using the energy reduction targets for commercial buildings established in these bills, federal policy can be reinforced and the markets incentivized to meet the reduction targets while the financial benefits of energy efficiency are utilized to stabilize the CRE market.*

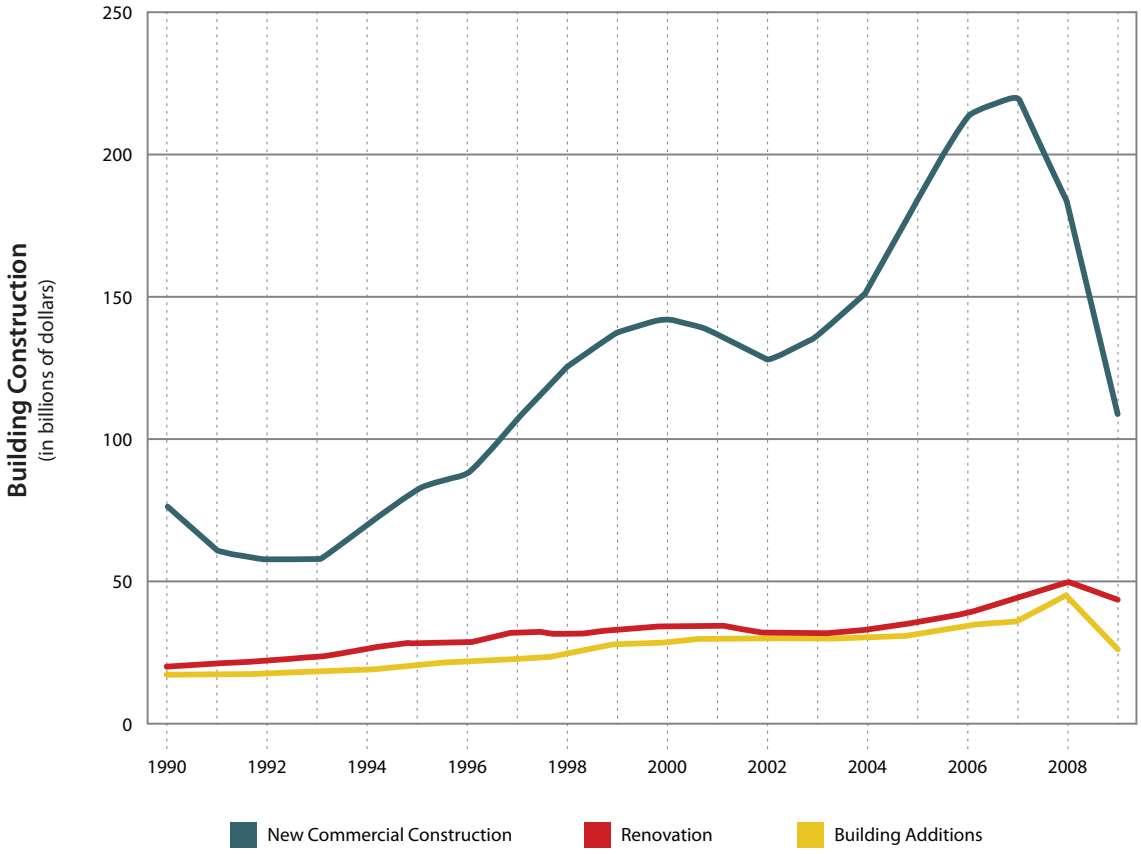
[12] Financial Regulators. (2009, October 30). *Policy Statement on Prudent Commercial Real Estate Loan Workouts*. www.federalreserve.gov/boarddocs/srletters/2009/sr0907a1.pdf.

[13] The White House. Office of the Press Secretary. *President Obama Outlines Latest in a Series of New Small Business Proposals*. ONLINE. 5 February 2010. Office of the Press Secretary. Available: http://www.whitehouse.gov/the-press-office/president-obama-outlines-latest-a-series-new-small-business-proposals.

[14] McGraw-Hill Construction. *U.S. Construction Starts in Millions of Dollars*. Bedford, Massachusetts.

Figure 3: Annual Value of Commercial Building Construction

Source: Adapted from McGraw-Hill Construction Statistics



The Size and Makeup of the Current Commercial Real Estate Market

How best to create demand for energy efficiency construction services within the CRE market depends greatly on the size and makeup of this market. There are over 4.7 million commercial buildings containing 78 billion square feet of space in the U.S. today[15]. Commercial buildings are often thought of as big box stores or high-rise buildings in city centers; however, most commercial buildings in the United States (90%) are less than 25,000 square feet, just twice the size of a residential lot, and 90% are one and two stories in height (Figures 4 and 5)[16]. Of total commercial building square footage, 65% is less than 100,000 square feet and 37% is less than 25,000 square feet[17].

Also, the majority of commercial buildings in the United States are privately owned (86%), 46% of those are owner occupied, and 81% are single establishments (Figure 6)[18]. Of the owner-occupied buildings, 91% are small commercial buildings under 25,000 square feet. In addition, 87% of all owner-occupied commercial buildings are one- and two-story buildings[19].

Of particular importance, the majority of the CRE market consists of smaller one- and two-story buildings, many of which are either owner-occupied or single-tenant occupied. This is significant because this category of buildings is easier, less expensive, and faster to renovate than other categories, such as large multi-story, multi-tenant-occupied buildings.

[15] U.S. Department of Energy. Office of Energy Efficiency and Renewable Energy. *The 2009 Buildings Energy Data Book Table 3.2.1*. ONLINE. October 2009. Office of the Press Secretary. Available: http://buildingsdatabook.eren.doe.gov/.

[16] U.S. Department of Energy. U.S. Energy Information Administration. *2003 CBECS Detailed Tables; Table B17 Occupancy of Nongovernment-Owned and Government-Owned Buildings, Number of Buildings*. ONLINE. September 2008. U.S. Energy Information Administration. Available: http://www.eia.doe.gov/emeu/cbecs cbecs2003/detailed_tables_2003/detailed_tables_2003.html.

[17] U.S. Department of Energy. U.S. Energy Information Administration. *2003 CBECS Detailed Tables; Table A1 Summary Table for All Buildings (Including Malls)*. ONLINE. September 2008. U.S. Energy Information Administration. Available: http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/detailed_tables_2003.html.

[18] U.S. Department of Energy. U.S. Energy Information Administration. *2003 CBECS Detailed Tables; Table B17 Occupancy of Nongovernment-Owned and Government-Owned Buildings, Number of Buildings*. ONLINE. September 2008. U.S. Energy Information Administration. Available: http://www.eia.doe.gov/emeu/cbecs cbecs2003/detailed_tables_2003/detailed_tables_2003.html.

[19] Ibid.

Figure 4: Commercial Buildings – Percentage by Size

Source: U.S. Energy Information Administration

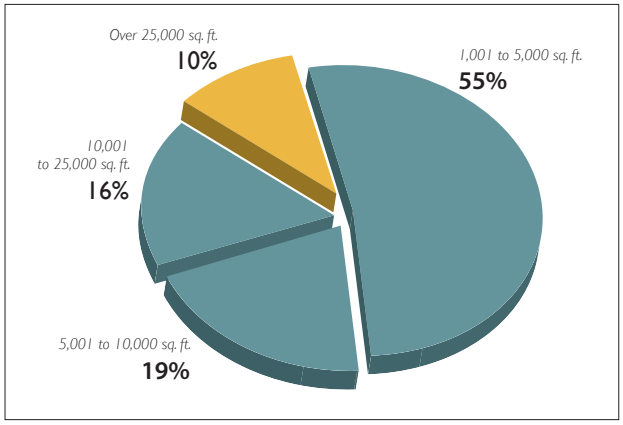


Figure 5: Commercial Buildings – Percentage by Number of Stories

Source: U.S. Energy Information Administration

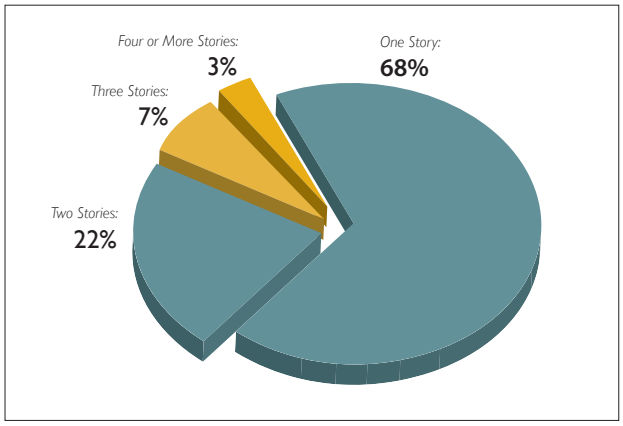
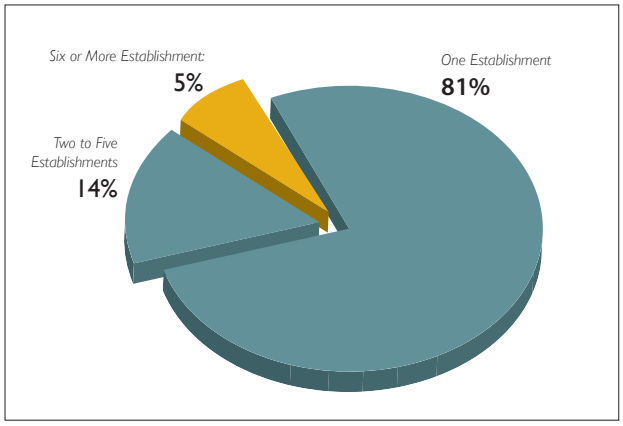


Figure 6: Commercial Buildings – Percentage by Number of Establishments

Source: U.S. Energy Information Administration



Commercial Building Energy Efficiency Renovation for Small Commercial Buildings

Smaller commercial buildings typically use less complex technologies and simpler equipment in greater quantities (more equipment per square foot) than larger buildings. Smaller buildings can also be more easily added to and renovated with products, systems, and architectural features designed to reduce energy consumption. They have a large roof area (per square foot of floor area), which can accommodate solar hot water heating systems, photovoltaic panels for electricity generation, and skylights, sun-lighting fixtures, and clerestories for distributed daylighting and passive heating of interior space. Large roof areas provide leasing options and additional income for building owners for solar electric generation and lease-purchase opportunities, with little up-front investment, for photovoltaic systems. Building owners can also take advantage of low interest Property Assessed Clean Energy (PACE) utility and revolving loan funds being established all over the country. These loans are used to finance energy efficiency retrofits and renewable energy systems. They require little or no equity and are paid back from a portion of the monthly energy savings.

That smaller one- and two-story commercial buildings are easier, less expensive, and faster to renovate and add onto is highly beneficial in many ways. It allows a solution to be developed that can be implemented quickly with the benefits, including job creation and increased income and property values, being achieved in a manner that is more timely and cost effective than other options. Additionally, this solution would directly help vulnerable small businesses and CRE borrowers, as well as the regional and community banks that hold a majority of smaller commercial building loans.

A Directed Solution Designed to Maximize Reach, Impact, and Benefits

By building a response to the CRE crisis, the solution developed can be structured so as to maximize the reach, impact, and benefits of the effort utilized. Incentives are an effective method for creating demand for services and products[20]. Employed strategically, the effectiveness of a particular incentive can be multiplied significantly. Specifically, by focusing a tax deduction for the energy efficiency renovation of commercial buildings and additions, this approach can be broadened to not only include stimulating CRE transactions, commercial building construction, increasing commercial building property values, and reducing the number of CRE defaults, but also reemploying this sector's highly skilled workforce and lowering building energy consumption, operating costs, and greenhouse gas emissions.

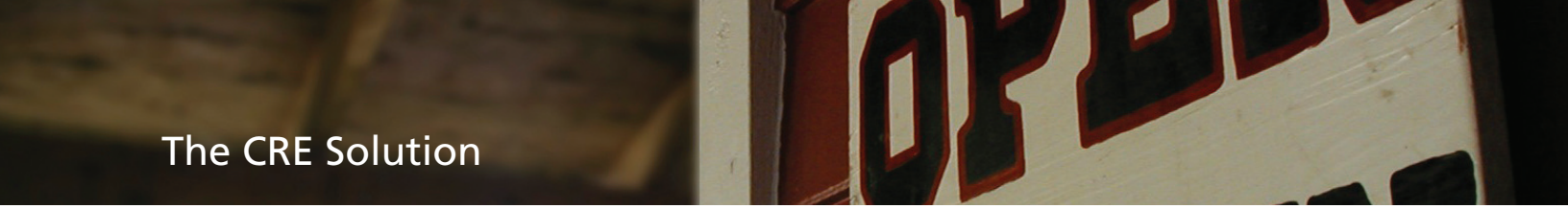
Providing incentives to encourage energy reductions in commercial buildings is already established in legislation. The Energy Policy Act of 2005 (EPAct 2005)[21], which passed with strong bipartisan support, provides a well-established mechanism for immediately and effectively implementing expanded incentives and energy reduction targets in the CRE market.

Currently, the Act provides up to $1.80 per sq.ft. for specific energy reduction targets in new and renovated commercial buildings. However, the Act can be amended to better align with the 2030 Challenge and current federal policy, as established in the American Clean Energy and Security Act (H.R. 2454) passed by the House and the American Clean Energy Leadership Act (S. 1462) passed out of the Energy and Natural Resources Committee in 2009, by expanding and increasing the existing energy-efficient commercial building tax deduction provision of EPAct 2005 from $1.80 per sq.ft. to a range of $4.50 to $9.00 per sq.ft. for renovations and $3.00 to $7.50 per sq.ft. for new buildings (for three years) when meeting the energy reduction targets of H.R. 2454 and S. 1462. This would provide an effective tax benefit for building purchases, renovations, and high-performance new buildings and additions, as well as significant energy savings for businesses and commercial property owners.

The specifics on how the amended Act would work, as well as its benefits, are provided in the CRE Solution detailed below.

[20] American Wind Energy Association and the Solar Energy Research and Education Foundation. (2008, February 13). *Economic Impacts of the Tax Credit Expiration*; http://www.awea.org/newsroom/releases/Delay_in_Extending_Renewable_Energy_Incentives_Risks_American_Jobs_020408.html.

[21] *Energy Policy Act of 2005*; HR 61, SEC. 1331. ENERGY EFFICIENT COMMERCIAL BUILDINGS DEDUCTION, Public Law 109-58, 109th Congress, August 8, 2005: http://www.govtrack.us/congress/bill.xpd?bill=h109-6.



The CRE Solution

In order to qualify for the limited, three-year tax deduction provided for under the CRE Solution, a building owner must renovate, add or build new to meet the energy reduction targets of the 2030 Challenge. It is this tax deduction for renovation that will make CRE property more attractive to buyers and create the needed demand that will close the gap between current bid and ask pricing, generating new CRE sales and $73.4 billion in private construction investment and spending; and, it is this investment and spending that will make over one million new jobs possible[22]. The Plan also creates a robust market for the effective distribution of capital accumulating in utility, PACE, and low-interest revolving loan fund programs.

The Plan leverages the benefits of increased tax deductions and energy reductions by offering, for both existing and new commercial properties, a limited, tiered, three-year tax deduction program tied to specific building energy reduction targets. The available tax deduction depends on the energy reduction target achieved; the more efficient the renovated or new building, the greater the tax deduction available. Because the CRE market is depressed with high vacancy rates, the tax deductions provided are greater for existing building renovation than new building construction.

Under the Plan, those owning or purchasing an existing property or constructing a new building could choose to receive a tax deduction for three years in return for investments in specific commercial building energy reduction targets. The annual deduction for renovations and new additions or buildings is equal to the total amount (100%) of the energy-efficient commercial property expenditures, subject to a maximum, as provided in the following tables:

Existing Building Renovations

3-Year	Minimum Energy Reduction Target
Maximum annual tax deduction per square foot of floor area	Percentage better than ASHRAE 90.1-2004
$4.50	30%
$6.00	50%
$7.50	75%
$9.00	Zero-Net-Energy

Renovation Example: For meeting a 50% energy reduction target, a building owner, purchaser, or investor of an existing 28,000 square foot commercial building would receive a tax deduction equal to the cost of building efficiency upgrades and/or renewable energy systems, up to $168,000 per year ($6.00 per sq.ft.) for three years. The owner would also save $1.47 per square foot each year on energy costs (total of $41,040 per year). In addition, the $1.47 per sq.ft. per year energy savings would increase the building's value by $16.29 per sq.ft.[23] For this example then, the investor would receive a total of approximately $250,128 in energy savings and tax deductions over the three years.

[22] See Appendix. Job estimates are based on a $6 billion Plan allocation of $4.8 billion for renovation and $1.2 billion for new construction. Job figures are derived from the Political Economy Research Institute's estimates as follows: 596,363 direct jobs, 356,653 indirect jobs and 383,763 induced jobs.

[23] U.S. Environmental Protection Agency. Energy Star. *Summary of the Financial Benefits of ENERGY STAR® Labeled Office Buildings.* Washington: February 2006. (Pg. 7). The capitalization rate was increased by 0.5% for each incremental reduction beyond 30% to be conservative.

New Building Construction

3-Year	Minimum Energy Reduction Target
Maximum annual tax deduction per square foot of floor area	Percentage better than ASHRAE 90.1-2004
$3.00	30%
$4.50	50%
$6.00	75%
$7.50	Zero-Net-Energy

New Building Example: For meeting a 50% energy reduction target, the owner of a newly constructed 28,000 square foot building would receive a tax deduction of $126,000 per year ($4.50 per sq.ft.) for three years. The owner would also save $1.00 per square foot each year on energy costs (total of $28,000 per year). In addition, the $1.00 per sq.ft. per year energy savings would increase the building's value by $11.11 per sq.ft.[24]

By tying financial incentives to meeting specific energy reduction targets, the CRE Solution effectively eases the stress on the CRE market, helping owners, developers, purchasers, and sellers by:

- decreasing building energy consumption and operating costs,
- increasing cash flow and property values, reducing the risk of default,
- narrowing the gap between current bid and ask price for commercial property,
- generating new CRE sales,
- increasing CRE desirability,
- providing an incentive to renovate and reposition re-sold properties, and
- creating new jobs.

Jobs, Tax Revenue, and Cost to the Federal Government

Based on $6 billion in deferred federal taxes, $73.4 billion in new private spending would be generated, resulting in the creation of 1.3 million jobs[25].

The Plan will also generate significant tax revenue, making it revenue positive both in the short term and long term. The tax base created by the new jobs and private capital invested will generate $15.9 billion in federal tax revenue, which is $9.9 billion more than the $6 billion in deferred taxes. The Plan would also generate $5.25 billion in much needed state and local government revenue for education, community services, and infrastructure projects.

In addition, as stated in the provisions of the existing legislation, the basis of the property is reduced by the deduction amount and the remaining asset value is depreciated over its tax life for the class of property. Once the property is sold, the federal government receives the deduction amount back in the form of taxes. The Plan's ability to pay for itself and generate additional revenue provides the opportunity to continue the Plan as needed.

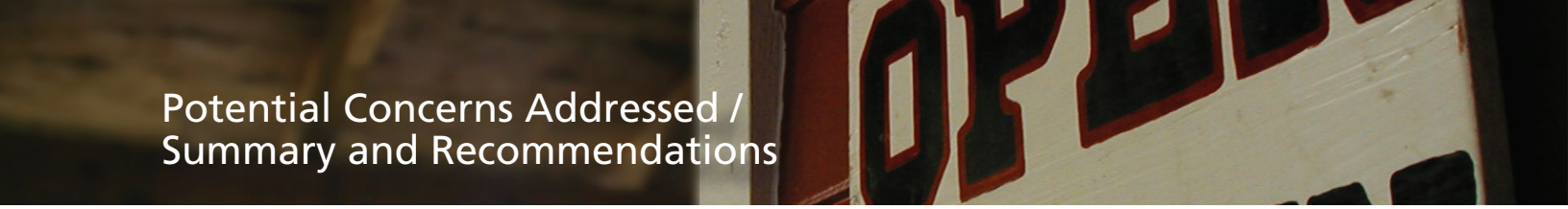
Major benefits of the CRE Solution include:

- generating $73.4 billion in new private spending,
- generating enough tax revenue to pay for itself,
- creating over one million new jobs[26], and
- reducing commercial building energy consumption by 95.4 Trillion Btu's annually and greenhouse gas emissions by 7.85 MMT CO_2e.

[24] U.S. Environmental Protection Agency. Energy Star. *Summary of the Financial Benefits of ENERGY STAR® Labeled Office Buildings*. Washington: February 2006. (Pg. 7). The capitalization rate was increased by 0.5% for each incremental reduction beyond 30% to be conservative.

[25] 596,363 direct, 356,653 indirect, and 383,763 induced jobs.

[26] The cost to the federal government per direct job is $10,061. This does not include the tax revenue the federal would receive from the direct, indirect and induced jobs created.



Potential Concerns Addressed / Summary and Recommendations

Potential Concerns Addressed

Timelines of implementation, certification of compliance, and cost to the federal government are legitimate concerns for any plan proposed to address the CRE crisis in today's economic environment, so these concerns are specifically addressed here:

How long will it take to implement the CRE Solution?

It will take at most 90 days to implement the Plan since legislation, specifically EPAct 2005, Section 179D, Energy Efficient Commercial Buildings Deduction, has been in effect since 2005 and is not set to expire until December 31, 2013[27].

How will the work be certified?

The work will be certified using the procedures currently required in EPAct 2005. Subsection (d)(6) of Section 179D outlines the certification process for inspection and testing that ensures compliance.

How much will the Plan cost the federal government?

It will cost $6 billion in deferred revenue to implement the CRE Solution; however, during the three-year period the Plan is in effect, the federal government will collect $15.9 billion in tax revenue from the $73.4 billion in new private spending generated by the Plan. Additionally, since the basis of the property is reduced by the amount of the tax deduction, the federal government will also receive the deferred tax deduction amount when the commercial property is sold.

Why not use accelerated depreciation instead?

Because accelerated depreciation for CRE property that is not coupled with efficiency renovation work will not guarantee new jobs, lower building operating costs, and result in new federal tax revenue that will more than cover the cost of the Plan.

Summary and Recommendations

Over the next few years, $1.4 trillion in commercial real estate loans generated during the boom years of 2005-2007 will come due and need refinancing; nearly half are underwater and many are near underwater. Due to a weak economy, high unemployment, and increasing vacancy rates, commercial property values have fallen more than 40% since the beginning of 2007. With a severely weakened commercial market, an additional and substantial wave of commercial loan losses could undermine an economic recovery and lead to further job losses, small business failures, and greater economic instability.

EPAct 2005 provides a ready instrument for implementing the changes needed to stabilize the CRE market while providing substantial benefits to commercial property owners, purchasers, small local and regional banks, businesses, and federal, state and local governments. Based on the ease of implementation afforded by EPAct 2005, the substantial benefits that would be realized by both the CRE market and the U.S. economy, and the reductions in energy consumption and greenhouse gas emissions, we recommend aligning Section 1331 of EPAct 2005 with the specific energy reduction targets of 30% below code up to zero-net-energy for new and renovated commercial buildings established by the 2030 Challenge and current federal policy.

Specifically, we recommend expanding and increasing the existing energy-efficient commercial building tax deduction provision of Section 1331 from $1.80 per sq.ft. to a range of $3.00 to $9.00 per sq.ft. for three consecutive years for meeting the congressional energy reduction targets of H.R. 2454 and S. 1462, as demonstrated in the CRE Solution.

Due to the scale and potential fallout of the looming CRE crisis, we recommend that the CRE Solution be adopted and implemented before the first wave of commercial loans become due.

[27] *Emergency Economic Stabilization Act of 2008*; HR 1424, SEC. 303. ENERGY EFFICIENT COMMERCIAL BUILDINGS DEDUCTION, Public Law 110-343, 110th Congress, August 8, 2005: http://www.govtrack.us/congress/billtext.xpd?bill=h110-1424.

Acknowledgements / Contacts

Acknowledgements

We are grateful to the following people who reviewed this whitepaper and provided constructive comments, insight and useful information (as individuals and not as representatives of their organizations):

Kermit Baker
Senior Research Fellow, Joint Center for Housing Studies, Harvard University, Cambridge, MA; Chief Economist for the American Institute of Architects, Washington, DC.

William G. Lashbrook III
Senior Vice President, PNC Real Estate, East Brunswick, NJ.

Roger Platt
Senior Vice President, Global Policy and Law, U.S. Green Building Council, Washington, DC.

Heidi Garrett-Peltier
Research Fellow at the Political Economy Research Institute, University of Massachusetts, Amherst.

Fabrizio Lillo
Professor, Santa Fe Institute, Santa Fe, NM.

Marc Porat
Operating Advisor, Pegasus Sustainable Century, Palo Alto, CA.

The concepts and views expressed in this paper are solely those of Architecture 2030.

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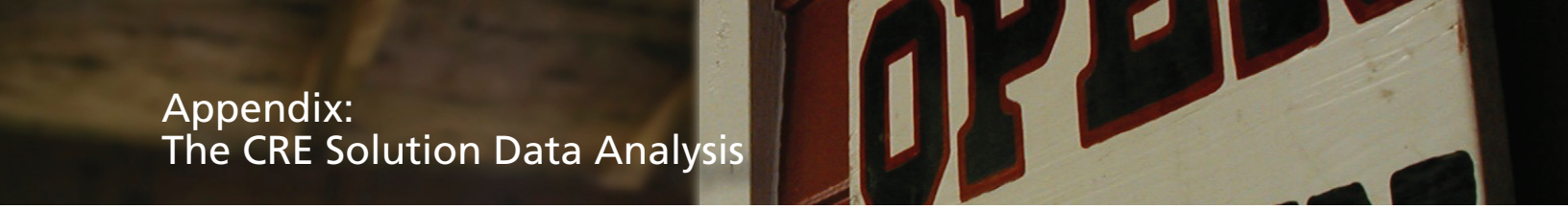

Appendix: The CRE Solution Data Analysis

Renovations of Existing Buildings

Percentage Better Than ASHRAE 90.1-2004	Private Investment ($/Sq. Ft.)[1]	Max. Annual Tax Deduction ($/Sq. Ft.)	Annual Energy Savings ($/Sq. Ft.)[2,3]	Annual Energy Savings (kBtu/Sq. Ft.)[3,4]	Asset Valuation Increase ($/Sq. Ft.)[5]
30%	$4.50	$4.50	$1.14	54.85	$13.41
50%	$6.00	$6.00	$1.47	70.52	$16.29
75%	$7.50	$7.50	$1.87	90.11	$19.71
100% (Zero-Net Energy)	$9.00	$9.00	$2.28	109.70	$22.80

New Construction

Percentage Better Than ASHRAE 90.1-2004	Private Investment ($/Sq. Ft.)[6,7,8]	Max. Annual Tax Deduction ($/Sq. Ft.)	Annual Energy Savings ($/Sq. Ft.)[9]	Annual Energy Savings (kBtu/Sq. Ft.)[4]	Asset Valuation Increase ($/Sq. Ft.)[5]
30% or ASHRAE 189	$148.61	$3.00	$0.60	32.91	$7.06
50%	$151.61	$4.50	$1.00	54.85	$11.11
75%	$154.61	$6.00	$1.50	82.28	$15.79
100% (Zero-Net Energy)	$157.61	$7.50	$2.00	109.70	$20.00

	Federal Tax Deferred	Allocated Percentage of Total Federal Tax Deferred	Square Footage Participating[10]	New Private Spending	Direct Jobs[11]	Indirect Jobs[11]	Induced Jobs[11]	Total Jobs[11]
Renovations of Existing Buildings	$4,800,000,000	80%	1,297,354,497	$6,349,206,349	59,683	27,937	34,921	122,540
New Construction	$1,200,000,000	20%	448,148,148	$67,085,010,582	536,680	328,717	348,842	1,214,239
Total	$6,000,000,000	100%	1,745,502,646	$73,434,216,931	596,363	356,653	383,763	1,336,778

	Total Annual Deferred Savings[12]	Total Annual Energy Savings	Total Annual Savings	Total Annual Energy Savings (TBtu)	Total Annual CO_2 Savings (MMT)[13,14]	Federal Revenue from New Private Spending[15]	Local State Revenue From New Private Spending[15]	Deferred Federal Revenue From Tax Deduction Over the Life of the Program (3 years)	Net Federal Revenue Over the Life of the Program (3 years)
Renovations of Existing Buildings	$1,600,000,000	$1,598,240,019	$3,198,240,019	76.90	6.33	$1,379,047,619	$453,968,254	$4,800,000,000	-$3,420,952,381
New Construction	$400,000,000	$336,772,487	$736,772,487	18.47	1.52	$14,570,864,298	$4,796,578,257	$1,200,000,000	$13,370,864,298
Total	$2,000,000,000	$1,935,012,506	$3,935,012,506	95.37	7.85	$15,949,911,917	$5,250,546,511	$6,000,000,000	$9,949,911,917

Appendix Endnotes

[1] The annual tax deduction granted is equal to the private investment for energy reduction measures, each year for three years.

[2] U.S. Department of Energy. Office of Energy Efficiency and Renewable Energy. *2008 Building Energy Databook: Table 3.3.8 Average Annual Energy Expenditures per Square Foot of Commercial Floorspace, by Year*. Washington: March 2009. Using 2010 data.

[3] 2030 adjusted for renovation using relationship between percentage below code and percentage below existing energy use, based on: 2030, Inc. / Architecture 2030. (2008). *Meeting the 2030 Challenge Through Building Codes*. Released June 20, 2008, www.architecture2030.org/news/multimedia.html.

[4] U.S. Department of Energy. Office of Energy Efficiency and Renewable Energy. *2008 Building Energy Databook: Table 3.1.3 Commercial Delivered and Primary Energy Consumption Intensities, by Year*. Washington: March 2009. Using 2010 data.

[5] U.S. Environmental Protection Agency. *Summary of the Financial Benefits of ENERGY STAR® Labeled Office Buildings*. Washington: February 2006. (Pg. 7). 2030 increased the capitalization rate by 0.5% for each incremental reduction beyond 30% to be conservative.

[6] U.S. Department of Energy. Office of Energy Efficiency and Renewable Energy. *2008 Building Energy Databook: Table 3.5.1 Value of New Commercial Building Construction, by Year*. Washington: March 2009. Using 2006 data.

[7] U.S. Energy Information Administration. *Annual Energy Outlook 2009 Reference Case Reflecting Provisions of the American Recovery and Reinvestment Act and Recent Changes in the Economic Outlook: Table 5. Commercial Sector Key Indicators and Consumption*. ONLINE. 2009. Energy Information Administration. Available: http://www.eia.doe.gov/oiaf/aeo/aeoref_tab.html [April 2009]. Using 2006 data.

[8] Kats, G., *Greening Our Built World*, Island Press, 2010. 2030 assumed no additional cost for a 30% reduction from ASHRAE 90.1-2004 and added $3/sq. ft. for each incremental reduction based on the average cost premium of new green construction..

[9] The Average Annual Energy Expenditures per Sq. Ft. for New Commercial is assumed to be $2.00 per sq. ft.

[10] Of the total renovated existing buildings participating 75% reach the first tier, 15% reach the second tier, 7% reach the third tier and 3% reach the final tier of net-zero energy. Of the total new construction participating 60% reach the first tier, 30% reach the second tier, 7% reach the third tier and 3% reach the final tier of net-zero-energy.

[11] Political Economy Research Institute (PERI).

[12] United States Government Accountability Office. Report to the Committee on Finance, U.S. Senate. *U.S. MULTINATIONAL CORPORATIONS: Effective Tax Rates Are Correlated with Where Income Is Reported*. (August 2008).

[13] U.S. Department of Energy. Office of Energy Efficiency and Renewable Energy. 2008 Building Energy Databook: Table 1 and 6 of Summary Sheet. Washington: September 2007.

[14] U.S. Department of Energy. U.S. Energy Information Administration. *Emissions of Greenhouse Gases in the United States 2007*. Pg. 17. Washington: December 2008.

[15] Assumes commercial construction produces the same percentage of tax revenue per dollar spent as residential construction. National Association of Home Builders. Fiscal Impacts of Building an Average Housing Unit on the U.S. Economy in 2005. Based primarily on data from the U.S. Bureau of Economic Analysis. Released August 5, 2005, http://www.nahb.org/generic.aspx?genericContentID=44096.