Current Situation

Between now and 2014, $1.4 trillion in commercial real estate (CRE) loans are becoming due; half of these loans are underwater and commercial vacancy rates show little sign of improvement. In addition, the construction industry has lost over two million jobs leading to job losses in related sectors and further shrinking revenue to state and local governments. Construction unemployment now hovers at 22.5% (see Figures 1 & 2).

The largest CRE loan losses are falling disproportionately on small businesses and smaller regional and community banks. The FDIC reports that:

- 140 banks failed in 2009,
- 157 banks failed in 2010, and
- 23 banks have failed in the first two months of this year.

(http://www.fdic.gov/bank/individual/failed/banklist.html)

Because these banks play a critical role in providing capital to small businesses and new business start-ups, their failure and the CRE crisis are undermining the economic recovery, leading to high unemployment and greater economic instability.

Better Buildings Initiative

The Administration’s Better Buildings Initiative (BBI) proposed on February 3, 2011, includes commercial building efficiency tax credits, which mirror similar tax incentives called for by Architecture 2030 in the CRE Solution, published in June 2010. The BBI tax credits proposed for meeting energy reductions below ASHRAE 90.1-2004 (baseline) are:

- $0.60 per square foot for a 20% to 29% reduction,
- $0.90 per square foot for a 30% to 49% reduction, and
- $1.80 per square foot for a reduction of 50% or more.

These tax credits would replace the current tax deductions contained in section 179D of the Internal Revenue Code. The tax credits are included in the President’s budget, which must be passed by Congress to take effect. Based on the assumptions outlined below, Architecture 2030 estimates that for each $1 billion in BBI commercial building efficiency tax credits, the program will generate $16.4 billion in new private spending and $3.6 billion in new federal tax revenue. The program will not only pay for itself, but also pay down the deficit by $2.6 billion. Additionally, each $1 billion in CRE tax credits would:

- Create 303,551 jobs*, quickly and cost effectively,
- Increase after-tax cash flow and property values,
- Reduce loan defaults,

* The 303,551 jobs created include 138,494 direct jobs, 78,071 indirect jobs, and 86,985 induced jobs
Fact Sheet

- Increase CRE desirability and investment value,
- Increase new CRE sales (by narrowing the gap between the bid and asking price of CRE property),
- Bring ESCo’s and A/E/C firms into the CRE market,
- Decrease building energy consumption, greenhouse gas emissions, and operating costs,
- Generate $1.2 billion in state and local government tax revenue, and
- Generate $4.8 billion in total tax revenue before the $1 billion tax credit is given.

Although commercial buildings are often thought of as big-box stores or high rises in city centers, 90 percent are actually smaller than 25,000 square feet. These are mostly one- and two-story, single- or double-occupancy buildings that are easy and inexpensive to add on to and/or renovate. If Section 179D is amended, the tax credit would apply to property placed in service on or before December 31, 2013.

Assumptions

The tax credits for renovations include $0.60 for 20%, $0.90 for 30%, and $1.80 for 50% energy reductions. The tax credits for new buildings include $0.90 for 30% and $1.80 for 50% energy reductions. Architecture 2030 does not recommend including a $0.60 tax credit for a 20% energy reduction in new buildings, since some state and local building codes already meet or are very close to meeting this target and the amount of private spending, tax revenue, and number of jobs per dollar outlay would be less.

For each $1 billion in tax credits, $700 million is allocated for renovation and $300 million is allocated for new construction.

The federal tax credits available for renovations are allocated as follows: 50% for the 20% reduction, 35% for the 30% reduction, and 15% for the 50% reduction. These are conservative estimates. If the allocation for the higher reductions increase, private spending, tax revenue, and number of jobs will also increase.

The federal tax credits available for new construction are allocated as follows: no tax credits for the 20% reduction, 70% for the 30% reduction, and 30% for the 50% reduction. These are conservative estimates. If the allocation for the 50% reduction increases, private spending, tax revenue, and number of jobs will also increase.

The additional cost for meeting the efficiency targets for renovations is $2.28 per square foot for a 20% reduction, $3.41 per square foot for 30% reduction, and $9.75 per square foot for a 50% reduction.

The additional cost for meeting the efficiency targets for new buildings is $2.62 per square foot for a 30% reduction and $7.48 per square foot for a 50% reduction.

Approximately 7% of the renovation tax credits are for renovations that would have met the efficiency targets anyway and do not generate new jobs or tax revenue, 80% are for renovations that upgrade to meet the efficiency targets (additional cost), and 13% are for renovations that would not have taken place if the tax credits were not available (See Worksheets for more detail).

Approximately 5% of the new building tax credits are for buildings that would have met the efficiency targets anyway and do not generate new jobs or tax revenue, 70% are for new buildings that upgrade to meet the efficiency targets (additional cost), and 25% are for new buildings that would not have been built if the tax credits were not available (See Worksheets for more detail).
Figure 1: U.S. Unemployment (2010 – 2011)
Source: U.S. Bureau of Labor Statistics

Figure 2: U.S. Monthly Job Losses or Gains in Construction (2008 – 2011)
Source: U.S. Bureau of Labor Statistics
## Worksheets:

**Commercial Building Tax Credit / Jobs Analysis**

**Architecture 2030**

### Renovations of Existing Buildings

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
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<td>$0.60</td>
<td>$2.28</td>
<td>$23.38</td>
<td>$0.65</td>
<td>31.34</td>
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<td>$0.90</td>
<td>$3.41</td>
<td>$24.51</td>
<td>$0.88</td>
<td>42.31</td>
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<td>50%</td>
<td>$1.80</td>
<td>$9.75</td>
<td>$30.85</td>
<td>$1.25</td>
<td>60.07</td>
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</table>

### New Construction

<table>
<thead>
<tr>
<th>Percentage better than ASHRAE 90.1 - 2004</th>
<th>Maximum Tax Credit ($/Sq. Ft.)</th>
<th>Private Investment of Incremental Cost8 ($)/Sq. Ft.</th>
<th>Private Investment of Incremental Cost + New Construction Cost8, 9, 10, 11 ($)/Sq. Ft.</th>
<th>Annual Energy Savings12 ($/Sq. Ft.)</th>
<th>Annual Energy Savings12 (kBtu/Sq. Ft.)</th>
<th>Asset Valuation Increase7 ($/Sq. Ft.)</th>
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<tbody>
<tr>
<td>20%</td>
<td>$0.60</td>
<td>$1.75</td>
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<td>$0.60</td>
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<td>50%</td>
<td>$1.80</td>
<td>$7.48</td>
<td>$156.09</td>
<td>$1.00</td>
<td>54.85</td>
<td>10.53</td>
</tr>
</tbody>
</table>

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7. 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.
12. The Average Annual Energy Expenditures per Sq. Ft. for New Commercial is assumed to be $2.00 per sq. ft.
## Renovations to Existing Buildings

<table>
<thead>
<tr>
<th>Percentage better than ASHRAE 90.1 -2004</th>
<th>Allocated Percentage of Federal Tax Credits Available</th>
<th>Square Footage Participating</th>
<th>New Private Spending</th>
<th>Direct Jobs</th>
<th>Indirect Jobs</th>
<th>Induced Jobs</th>
<th>Total Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>20%</td>
<td>50%</td>
<td>$350,000,000</td>
<td>583,333,333</td>
<td>10%</td>
<td>80%</td>
<td>10%</td>
<td>$2,425,408,942</td>
</tr>
<tr>
<td>30%</td>
<td>35%</td>
<td>$245,000,000</td>
<td>272,222,222</td>
<td>5%</td>
<td>80%</td>
<td>15%</td>
<td>$1,742,553,204</td>
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<tr>
<td>50%</td>
<td>15%</td>
<td>$105,000,000</td>
<td>58,333,333</td>
<td>1%</td>
<td>79%</td>
<td>20%</td>
<td>$809,269,288</td>
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</tbody>
</table>

100% $700,000,000 913,888,889 $4,977,231,434

### Total Annual Energy Savings

- **Percentage better than ASHRAE 90.1 -2004**
- **Square Footage Participating**
- **Total Annual Energy Savings**
- **Total Annual Energy Savings (TBtu)**
- **Total Annual CO2 Savings (MMT)**
- **Total Asset Valuation Increase**

<table>
<thead>
<tr>
<th>Percentage better than ASHRAE 90.1 -2004</th>
<th>Square Footage Participating</th>
<th>Total Annual Energy Savings</th>
<th>Total Annual Energy Savings (TBtu)</th>
<th>Total Annual CO2 Savings (MMT)</th>
<th>Total Asset Valuation Increase</th>
</tr>
</thead>
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<tr>
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<td>$380,025,333</td>
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<td>58,333,333</td>
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</table>

913,888,889 $692,258,354 33.31 2.74 $7,897,549,515

### Increased Federal Revenue from New Private Spending

- **Percentage better than ASHRAE 90.1 -2004**
- **Square Footage Participating**
- **New Private Spending**
- **Increased Federal Revenue from New Private Spending**

<table>
<thead>
<tr>
<th>Percentage better than ASHRAE 90.1 -2004</th>
<th>Square Footage Participating</th>
<th>New Private Spending</th>
<th>Increased Federal Revenue from New Private Spending</th>
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<tbody>
<tr>
<td>20%</td>
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<td>$2,425,408,942</td>
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<tr>
<td>30%</td>
<td>272,222,222</td>
<td>$1,742,553,204</td>
<td>$378,482,556</td>
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<td>50%</td>
<td>58,333,333</td>
<td>$809,269,288</td>
<td>$175,773,289</td>
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913,888,889 $4,977,231,434 $1,081,054,667 $355,872,048
Assumptions for Renovations to Existing Buildings

1 Assumes 70% of the total federal tax credits available are allocated for renovations.

2 Assumes that of the federal tax credits available for renovations, 50% are allocated for the 20% reduction, 35% are allocated for the 30% reduction, and 15% are allocated for the 50% reduction.

3 Assumes that 10% of those meeting the 20% reduction, 5% of those meeting the 30% reduction, and 1% of those meeting the 50% reduction would have been renovated and met the efficiency standard anyway. Therefore no new private spending is generated.

4 Assumes that 80% of those meeting the 20% reduction, 80% of those meeting the 30% reduction, and 79% of those meeting the 50% reduction would have been renovated anyway, but without meeting the efficiency standards. Therefore only the incremental cost to achieve the efficiency standards is considered as new private spending.

5 Assumes that 10% of those meeting the 20% reduction, 15% of those meeting the 30% reduction, and 20% of those meeting the 50% reduction would not have renovated if the tax credits were not available. Therefore, the total cost of construction and the incremental cost to achieve the efficiency standards is considered as new private spending.

6 The Political Economy Research Institute (PERI) estimates that every $1 billion invested in Non-Residential Renovation creates 9,400 direct jobs, 4,400 indirect jobs, and 5,500 induced jobs.


8 Assumes that 80% of those meeting the 20% reduction, 80% of those meeting the 30% reduction, and 79% of those meeting the 50% reduction would have been renovated anyway, but without meeting the efficiency standards. Therefore only the incremental cost to achieve the efficiency standards is considered as new private spending.

9 Assumes 70% of the total federal tax credits available are allocated for renovations.

10 Assumes that of the federal tax credits available for renovations, 50% are allocated for the 20% reduction, 35% are allocated for the 30% reduction, and 15% are allocated for the 50% reduction.

11 Assumes that 10% of those meeting the 20% reduction, 5% of those meeting the 30% reduction, and 1% of those meeting the 50% reduction would have been renovated and met the efficiency standard anyway. Therefore no new private spending is generated.


13 Assumes that 80% of those meeting the 20% reduction, 80% of those meeting the 30% reduction, and 79% of those meeting the 50% reduction would have been renovated anyway, but without meeting the efficiency standards. Therefore only the incremental cost to achieve the efficiency standards is considered as new private spending.

14 Assumes 70% of the total federal tax credits available are allocated for renovations.

15 Assumes that of the federal tax credits available for renovations, 50% are allocated for the 20% reduction, 35% are allocated for the 30% reduction, and 15% are allocated for the 50% reduction.

16 Assumes that 10% of those meeting the 20% reduction, 5% of those meeting the 30% reduction, and 1% of those meeting the 50% reduction would have been renovated and met the efficiency standard anyway. Therefore no new private spending is generated.

<table>
<thead>
<tr>
<th>Percentage better than ASHRAE 90.1 -2004</th>
<th>Square Footage Participating</th>
<th>New Private Spending(^1)</th>
<th>Direct Jobs(^6)</th>
<th>Indirect Jobs(^6)</th>
<th>Induced Jobs(^6)</th>
<th>Total Jobs(^6)</th>
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<tbody>
<tr>
<td>20%</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
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<td>74,004</td>
<td>45,327</td>
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<td>167,434</td>
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<td></td>
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<td>11,463,555,516</td>
<td>91,708</td>
<td>56,171</td>
<td>59,610</td>
<td>207,490</td>
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<table>
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<th>Square Footage Participating</th>
<th>Total Annual Energy Savings(^7)</th>
<th>Total Annual Energy Savings (TBtu)(^8)</th>
<th>Total Annual CO(_2) Savings(^9) (MMT)</th>
<th>Total Asset Valuation Increase(^11)</th>
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<th>Square Footage Participating</th>
<th>New Private Spending(^1)</th>
<th>Increased Federal Revenue from New Private Spending(^12)</th>
<th>Increased Local and State Revenue from New Private Spending(^12)</th>
</tr>
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<td>20%</td>
<td>0</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>30%</td>
<td>233,333,333</td>
<td>9,250,472,556</td>
<td>$2,009,202,639</td>
<td>$661,408,788</td>
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<tr>
<td>50%</td>
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<td>$158,235,432</td>
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<tr>
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<td>283,333,333</td>
<td>11,463,555,516</td>
<td>$2,489,884,258</td>
<td>$819,644,219</td>
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</table>
Assumptions for New Construction

1 Assumes 30% of the total federal tax credits available are allocated for new construction.

2 Assumes that of the federal tax credits available for new construction, no tax credits are allocated for the 20% reduction, 70% are allocated for the 30% reduction, and 30% are allocated for the 50% reduction.

3 Assumes 5% of all square footage participating would have been built and met to the efficiency standards anyway. Therefore, no new private spending is generated.

4 Assumes 70% of all square footage participating would have been built anyway, but not have met the efficiency standards. Therefore only the incremental cost to achieve the efficiency standards is considered as new private spending.

5 Assumes 25% of all square footage participating would not have been built anyway. Therefore the total cost of construction and the incremental cost to achieve the efficiency standards is considered as new private spending.

6 The Political Economy Research Institute (PERI) estimates that every $1 billion invested in Commercial New Construction creates 8,000 direct jobs, 4,000 indirect jobs, and 5,200 induced jobs.

7 The Average Annual Energy Expenditures per Sq. ft. for New Commercial is assumed to be $2.00 per sq. ft.


11 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.


Summary

<table>
<thead>
<tr>
<th>Total Federal Tax Credits Available</th>
<th>$1,000,000,000</th>
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<tr>
<td>Square Footage Participating</td>
<td>New Private Spending</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Renovations of Existing Buildings</td>
<td>913,888,889</td>
</tr>
<tr>
<td>New Construction</td>
<td>283,333,333</td>
</tr>
<tr>
<td>Total</td>
<td>1,197,222,222</td>
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<tr>
<td>-------------------------------------</td>
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</tr>
<tr>
<td>Total Annual Energy Savings</td>
<td>Total Annual Energy Savings (TJ)</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Renovations of Existing Buildings</td>
<td>$692,258,354</td>
</tr>
<tr>
<td>New Construction</td>
<td>$190,000,000</td>
</tr>
<tr>
<td>Total</td>
<td>$882,258,354</td>
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</tbody>
</table>
Assumptions

- Average Annual Energy Expenditures per Sq. Ft. for Existing Commercial
  - $2.28 $/sq. ft.
- Average Annual Energy Expenditures per Sq. Ft. for New Commercial
  - $2.00 $/sq. ft.
- Average Delivered Energy Consumption Intensity for Existing Commercial
  - 109.7 kBTU/sf/yr
- Commercial Building Fossil Fuel Energy
  - 13.22 Quads / Year
- Commercial Buildings CO2 Emissions
  - 1.087.4 MMTCO2 / Year
- Value of New Commercial Building Construction in 2006
  - 307.1 $2006 billion
- New Additions in 2006
  - 2.1 billion square feet
- Value of New and Existing Commercial Building per Sq. Ft.
  - $148.61 per square foot
- Value of Commercial Alterations in 2009
  - 42.21 billion $
- Renovated Annual Commercial Floor Space
  - 2.0 billion square feet
- Value of New and Existing Commercial Building per Sq. Ft.
  - $21.10 per square foot
- Asset Valuation Increase from Energy Cost Savings
  - 8.50% Capitalization Rate
- Federal Tax Revenue as Percentage of Private Spending
  - 21.72%
- Local and State Tax Revenue as Percentage of Private Spending
  - 7.15%

<table>
<thead>
<tr>
<th>Number of Jobs Per $1 Billion</th>
<th>Direct</th>
<th>Indirect</th>
<th>Induced</th>
<th>Total</th>
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<tbody>
<tr>
<td>Non-Residential Renovations</td>
<td>9,400</td>
<td>4,400</td>
<td>5,500</td>
<td>19,300</td>
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<tr>
<td>Commercial New Construction</td>
<td>8,000</td>
<td>4,900</td>
<td>5,200</td>
<td>18,100</td>
</tr>
</tbody>
</table>

Approximate Equivalent Percentage below Average Energy Use

- Renovation: 42.86% 64.29% 82.14% 100.00%
- New Construction: 30.00% 50.00% 75.00% 100.00%

2 The Average Annual Energy Expenditures per Sq. Ft. for New Commercial is assumed to be $2.00 per sq. ft.
9 Pike Research, Energy Efficiency Retrofits for Commercial and Public Buildings: Table 1.2 Quantitative Overview of the Commercial Building Retrofit Market. Released 3Q 2010.
10 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.
13 The Political Economy Research Institute (PERI)