



EFFECTIVE INTERVENTION POINTS FOR THE BUILDING SECTOR

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Never has the importance of the Building Sector been so keenly felt. Whether the topic is unemployment, the economy, energy consumption, greenhouse gas emissions, or climate change, the Building Sector is at the center of the discussion as a major part of the problem.

A quick look at the ‘stats’ of the U.S. Building Sector makes the point. Whereas overall unemployment is currently at 9.7%¹, construction unemployment is at 24.9%². Residential construction has declined 70% since 2006³ and the commercial real estate (CRE) market is essentially frozen⁴. With \$1.4 trillion in commercial real estate loans coming due between now and 2014, and with half of these loans currently ‘underwater’, the serious instability of the CRE market threatens the health of our nation’s already-fragile economy⁵. In addition, the Building Sector is responsible for half of all energy consumption and greenhouse gas emissions in the U.S., ultimately making it the largest contributor to climate change⁶.

Fortunately, with strategic changes, the Building Sector can be transformed into a major part of the solution for all of the above-mentioned crises. However, to be effective, it is critical to understand how the Building Sector works. In particular, when developing programs to affect change in the residential and commercial building sectors, it is important to recognize each sector’s optimal intervention points, i.e. points where major transformations can most easily take place. Programs that do not recognize these intervention points, or fail to take advantage of them, face unnecessary obstacles and costs, and even potential failure.

Intervention points occur over the life of a building, from its inception to its demolition, and can be summed up as follows:

Optimal intervention points for residential buildings occur during:

- Building design – schematic design, material, and building systems selection
- Existing home purchases
- Home mortgage refinancing
- Rebuilding (after a natural disaster)

For commercial buildings they occur during:

- Building design – schematic design, material, and building systems selection
- Existing building purchases
- Leasing / tenant improvements
- Building renovation cycles
- Rebuilding (after a natural disaster)

¹ Department of Labor. Bureau of Labor Statistics. Employment Situation Summary. ONLINE. 2 April 2010. Bureau of Labor Statistics. Available: <http://www.bls.gov/news.release/empsit.nr0.htm>

² Ibid.

³ U.S. Census Bureau, New Residential Construction, Table Q1. New Privately Owned Housing Units Started in the United States by Purpose and Design. Available: <http://www.census.gov/const/www/newresconstindex.html>

⁴ Grinis and Seyfarth, Ernst & Young LLP, Is History Repeating Itself?, US distressed real estate loans investor survey, 2010. www.ey.com/Publication/vwLUAssets/Is.../Is_history_repeating_itself.pdf

⁵ 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>.

⁶ www.architecture2030.org

Schematic design, the first intervention point, is the time when the energy consumption and emissions pattern of a building is set for its useful lifetime, or until it undergoes a major renovation. Other intervention points occur at the times when construction / renovation takes place, typically when a building is purchased, changes occupancy, or is refinanced.

Building energy code policy, design tools, and financial incentives are key for affecting change at these intervention points. The financial incentives for the residential sector are best implemented through mortgage financing or refinancing; for the commercial sector, through tax deductions and tax credits. It is also important to note that planning decisions at the regional, county and city level can have large economic, energy, and emissions implications as well.

Building renovation should not be confused with weatherization. Weatherization is simply increasing the efficiency of existing conditions. It typically consists of caulking and weather-stripping, additional insulation, ductwork sealing, and upgrading windows, doors, and equipment in existing buildings. Cost for weatherization ranges in the thousands of dollars. Today, most federal stimulus dollars for energy efficiency and energy reductions in the Building Sector are for weatherization projects.

Renovation, on the hand, is an intervention point where a major transformation can take place. Renovation is more extensive than weatherization and can include demolition, structural work, interior and exterior construction and finishes, and plumbing, electrical, HVAC, and lighting upgrades, redesign, and replacement. Costs for renovation can range from tens of thousands to millions of dollars.

By combining code policy, design tools, and financial incentives at the intervention points provided above, these private construction / renovation dollars can be powerfully leveraged to create a new, trillion-dollar market and millions of new jobs.