

To an economist, buildings are much more than structures providing shelter. They are structures that create economic capacity for businesses. While the economic contributions accruing from the actual construction phase for new buildings are widely understood and valued, the pre-construction and post-construction impacts of the development process often are overlooked and undervalued.

Likewise, the job growth and income generated and supported by annual building operations represent a continuing flow of expenditures into local, state and national economies that extend over the life of the structures. These new buildings represent an expansion of the productive capacity of their local economies and serve as enablers that further enlarge the local, state and national economies. The jobs and output associated with the newly built capacity generate significant annual economic and fiscal (i.e., tax revenue) benefits at all governmental levels. Because these post-construction benefits are cumulative, their economic impacts become increasingly significant to the economy's growth.

Summary of Construction Activity

The commercial construction sector continued its recovery in 2013 after first showing signs of a rebound in 2011, following several consecutive years of decreased spending from its peak in 2008. The 2013 gains spanned most commercial building types and generated increased construction employment. Forecasts for 2014 project accelerating construction spending, with high single-digit gains in fixed investment in commercial structures such as office, retail, commercial, health care and manufacturing facilities. These positive trends in construction spending, especially in commercial and health care buildings, are projected to gain further strength in 2015 and 2016.

The contribution of construction spending to the U.S. economy is well understood. This linkage between the national economy's accelerating expansion and the continuing slow recovery of residential and nonresidential construction spending in 2013 will become more pronounced with projected increases each year going forward through 2017. The construction industry is expected to achieve equilibrium in terms of supply and demand in 2018. With the direct and indirect impact of construction spending on the U.S. economy (GDP) in 2013 totaling \$2.8 billion and accounting for 16.5 percent of GDP, the accelerating growth of construction spending that began in 2011 will be responsible for significantly boosting the economy's rate of growth between 2014 and 2017.

Measuring Economic Value. To fully understand the impact of development expenditures on the performance of the national, state and local economies, one must identify and measure the range and composition of activities and associated spending and their interdependencies with the economy's other sectors. The economic value of commercial buildings extends well beyond their initial construction value, and even this construction value is often understated. In order to establish the comprehensive measure of this value, it is necessary to understand that the process of creating the built environment is carried out in a logical sequence, and the underlying elements in each phase must be examined to determine the full expenditures associated with commercial buildings. These key phases consist of the following:

- Pre-construction (soft costs), including design, engineering, legal and other processes;
- Construction, including site development, building activity (hard costs) and tenant improvements; and
- Post-construction, including ongoing building operations.

Direct spending during these three development phases provides the foundation for calculating the contribution of development to the national economy as well as to respective state and local economies.

Five expenditure types are examined to determine the monetary expenditures associated with development, construction and operations. These consist of the following:

- Soft construction costs (architecture, engineering, marketing, legal, management, administration);
- Site development costs (grading, paving, landscaping, roadway, parking, off-site improvements);
- Hard construction costs (labor, materials, construction management);

- Tenant improvements (interior design and construction, excluding furniture and equipment); and
- Building operations (maintenance, repair, custodial services, utilities, property management).

The direct spending for development and operations generates additional jobs and increases payrolls. These dollars are re-spent within the local, state and national economies, generating additional economic benefits. The total economic impact of these direct development-related expenditures can be calculated by applying national, state and local multipliers. These multipliers measure the far-reaching effects of the initial expenditures on the overall U.S. economy as these initial expenditures are recycled/re-spent within the economy. Using the multipliers, this report calculates the following:

- Total economic contribution to the U.S. economy (GDP);
- New personal earnings (wages and salaries) generated; and
- Jobs supported throughout the U.S. economy, including direct construction jobs.

The “jobs supported” figures do not equate only to net new jobs; they include both new and existing jobs already in the economy needed to support the 2013 level of development, construction and operations reported herein.

Combined, the pre-construction, construction and operations phases — and their associated economic impacts — represent commercial real estate development’s enduring financial strength and compounded contribution to the economy. The economic contributions associated with new office, industrial, warehouse and retail development in 2013 are summarized in Table 2.

The Importance of the Construction Sector to U.S. GDP.

In 2013, construction spending nationwide for residential and nonresidential buildings and nonbuildings (e.g., roads, bridges, pipelines) totaled \$898.4 billion and, when multiplied to reflect its full contribution, accounted for 16.5 percent of GDP. (See Table 1.) This spending level remains well off its high in 2007, when construction spending totaled \$1.16 trillion and accounted, with the full multiplier effect, for 28.8 percent of GDP. The importance of the construction sector to the vitality of the national economy is illustrated by this decline of 29.12 percentage points, which translated into significant job losses extending beyond the construction sector (down 2.2 million jobs between 2006 and 2010) to

the manufacturing, professional and business services, and retail sectors, as well as to declining personal earnings across all sectors as payroll expenditures fell during the building industry's long recession.

The long and deep decline in construction spending reached its low point during the first half of 2011, with both residential and nonresidential building expenditures experiencing increased spending in the second half of the year. The emerging recovery in the construction sector accelerated in 2012 and expanded further in 2013, becoming an increasingly positive force in the continuing recovery of the U.S. economy in 2013.

The construction sector's recovery beginning in mid-2011 established the foundation for the forecasts for the U.S. economy going forward. The recovery lost momentum in 2013 (when GDP was up 1.9 percent, compared to 2.8 percent in 2012), as the global economy continued to struggle with its recovery (especially in Europe) and the U.S. economy digested changes in fiscal policy and federal spending reductions. In spite of these challenges to the national economy in 2013, the residential sector achieved a 17.5 percent increase in total construction spending and is projected to continue expanding through 2017, when it will attain its pre-recession level of starts of 1.6 million units. Nonresidential building investment also is projected to increase through this period, peaking in 2017. These trends in construction spending will support strong growth rates (ranging between 2.5 and 3.4 percent) for the national economy going forward through the remainder of this decade, with GDP growth projected to achieve its peak rate for this business cycle in 2016 at 3.4 percent.

Table 4
Total U.S. Construction Spending, 2010-2013
(In Billions of Current Year Dollars)

Type	Value	Percent Change 2012-2013
Residential Building		
2013	\$336.6	17.5%
2012 ¹	286.5	
2011	244.4	
2010	248.7	
Nonresidential Building		
2013	\$340.2	1.0%
2012 ¹	336.7	
2011	312.7	
2010	327.1	
Nonbuilding ²		
2013	\$221.6	4.8%
2012 ¹	238.8	
2011	230.3	
2010	227.8	
Total		
2013	\$898.3	4.8%
2012¹	857.0	
2011	787.4	
2010	803.6	

Source: U.S. Census, Value of Construction Put In Place

¹ Revised 2012 data for construction spending and GDP.

² Includes infrastructure such as water, sewer, highways and power.

Note: Column values may not add up due to rounding.

Office, Industrial, Warehouse and Retail Hard Construction Spending Grows for a Third Year.

At the pre-recession peak in 2007, hard construction expenditures totaled \$89.2 billion and accounted for 839 million square feet of new office, industrial, warehouse and retail building space. (See Table 5.) During the next three years, hard construction spending declined by 53.2 percent and the amount of space constructed declined by 72.8 percent.

Hard construction spending reversed this downward trend in 2011, when it increased for the first time since 2007. This recovery has continued each year since. In 2013, hard construction spending for office, industrial, warehouse and retail development increased to \$61.6 billion for a gain of 25.2 percent from 2012. A total of 363.6 million square feet of building space was added to the inventory in 2013, representing an increase of 18.2 percent over building space additions in 2012.

As the U.S. economic recovery moved to a self-sustaining growth path beginning in 2010, hard construction spending has generated important economic benefits and has helped drive the economy's expansion, beginning in 2011 with the generation of 309,000 direct construction jobs that have added to the gains being registered more broadly across the economy and to the substantial reduction in the nation's unemployment rate over this period. As this pattern of stronger growth in hard construction spending continues in 2014 and beyond, it will become an even more important source of job growth. (Annual employment growth is projected to peak at 2.1 percent in 2016, up from 1.7 percent in 2013.)

Table 5
Office, Industrial, Warehouse and Retail Construction in the U.S.

Year	Value (In Billions of Current Year Dollars)	New Square Feet
2013	\$61.6	363.6
2012 ¹	52.2	329.2
2012 ²	49.2	307.5
2011	47.8	238.4
2010	41.7	228.4
2009	46.6	264.5
2007	89.2	839.0

Source: McGraw-Hill Construction Analytics

¹ As reported February 2014

² As reported February 2013

As shown in Table 2 on page 7, the effects of \$61.65 billion in hard construction expenditures added \$190.2 billion to the national economy (GDP) in 2013, as the full impact of these hard construction expenditures (payroll and purchases) circulated through the economy. This hard construction spending supported 1.4 million jobs (full-time, year-round equivalent) across all sectors of the economy, generating personal earnings totaling \$60.2 billion. This hard construction spending accounted for 49.6 percent of total spending for office, industrial, warehouse and retail building development in 2013.

The other 50.4 percent of total development-related expenditures included soft construction (soft costs), site development and tenant improvement costs. In 2013, this spending totaled an estimated \$62.6 billion. It also:

- Contributed \$186.1 billion to U.S. GDP;
- Generated \$59.8 billion in new personal earnings; and
- Supported a total of 1.4 million jobs.

The combined economic contributions of the expenditures made during all four phases of development added 363.6 million square feet of new office, industrial, warehouse and retail building space to the existing inventory during 2013. It also:

- Contributed \$376.4 billion to U.S. GDP;
- Generated \$120.0 billion in new personal earnings; and
- Supported a total of 2.8 million direct and indirect jobs.

Contributions of Building Operations in 2013. In addition to the significant contribution to GDP and job and income growth nationwide that constructing 363.6 million square feet of new building space represents, these buildings continue to provide economic benefits to their economies long after construction is completed. These economic impacts include spending required to maintain and operate the buildings and the value of the work done in them. The operating expenditures associated with the office, industrial, warehouse and retail space built in 2013 are estimated to total \$1.1 billion annually. This direct spending for building operations will:

- Contribute \$3.1 billion to U.S. GDP;
- Generate \$966 million in new personal earnings; and
- Support 24,285 jobs.

These operating expenditures are annual and recur yearly over the life span of the building. Adding these new operating expenditures to those required to operate the total 43.9 billion square foot inventory of office, retail and industrial/flex building space in 2013 brings this operating expenditure total to \$134.3 billion with an overall contribution to GDP totaling \$370.9 billion. These total operating expenditures would support 2.9 million jobs nationwide with personal earnings (wages and salaries) of \$116.8 billion.

Jobs Housed in New 2013 Space. The potential productive value of these new building spaces represents a significant annual contribution to the local, state and national economies. The actual total output value of this new space is the sum of the values of the work done in these buildings. A partial measure of this total value is represented by the jobs that could be housed in this space and the earnings that these jobs may generate. Using updated jobs-per-square foot estimates reflecting current occupancy patterns and current average salary levels, this new space would have the capacity to house 923,630 jobs with an annual payroll of \$43.1 billion. (See Table 17 on p. 41.)

Outlook: Construction Spending and U.S. GDP. The strength of the U.S. economy's recovery is directly linked to the pace of recovery experienced by the construction sector, both residential and nonresidential. As construction expenditures move toward normal levels between 2014 and 2017, the U.S. economy's growth rate is projected to increase to 3.5 percent in 2016, its highest level of the current decade (IHS Global Insight, May 2014). Building on the gains in residential construction spending and increasing nonresidential construction expenditures in transportation, retail, manufacturing, office and lodgings in 2013, these broad-based gains in residential and nonresidential building construction in 2013 extended the national recovery to a fourth year in a year of slower GDP growth due to substantial reductions in federal government spending in fiscal year 2013.

With projections that both residential and nonresidential (commercial, health care, manufacturing and warehousing) construction expenditures will continue to expand in 2014 and beyond, with the peak growth rate to be achieved in 2017, the U.S. economy will experience stronger growth once it digests the federal budget adjustments that began in 2012 and are projected to stabilize in 2016. Both GDP and employment growth rates are projected to attain their highest levels of the current business cycle between 2015 and 2017, as increases in residential and nonresidential construction expenditures combine to generate significant new capital spending and job growth. Going forward, the U.S. economy cannot achieve a sustained expansion in the absence of the construction industry's full recovery, which currently is projected to be achieved in 2017.

The analyses presented in this report define the economic contributions of the nonresidential building construction industry, highlighting the economic impacts generated by office, industrial, warehouse and retail construction and operations. As the economy moves into a sustained expansion in 2014, it is important for government officials at all levels — as well as investors, developers and builders — to understand the range and magnitude of the construction industry's contributions to the national, state and local economies; their patterns of performance during the business cycle; and the direct correlation between the magnitude and length of the expansion and the health and performance of the building industry.

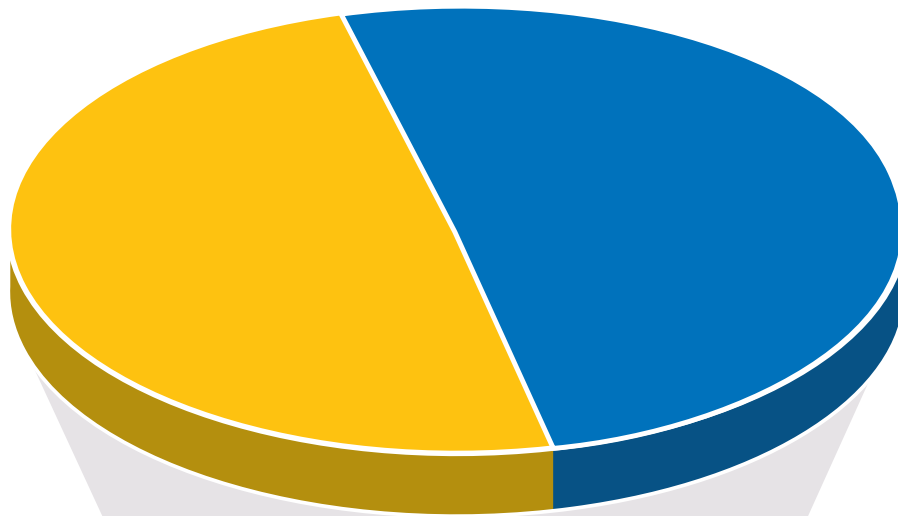
Figure 1

How Commercial Building Development Contributed to the U.S. Economy in 2013

TOTAL CONTRIBUTION = \$376.3 BILLION

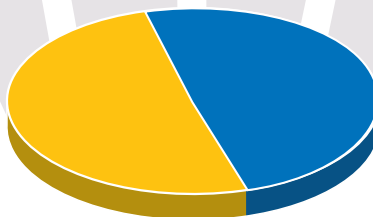
**SOFT COSTS,
SITE IMPROVEMENTS,
TENANT IMPROVEMENTS**
186.1 BILLION, 49.4%

HARD COSTS
\$190.2 BILLION, 50.6%



MULTIPLIER =

A number used to calculate the final economic impact of one dollar spent



DIRECT EXPENDITURES = \$124.2 BILLION

**SOFT COSTS,
SITE IMPROVEMENTS,
TENANT IMPROVEMENTS**
\$62.6 BILLION, 50.4%

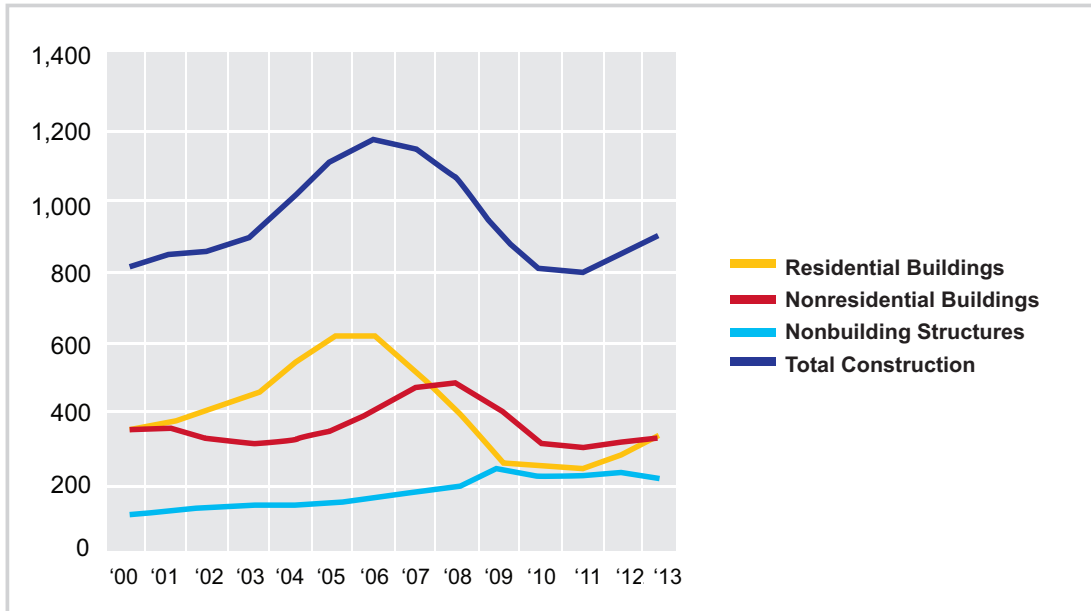
HARD COSTS
\$61.6 BILLION, 49.6%

Construction Sector Trends and Outlook

The Great Recession began in December 2007 and ended in June 2009. Although the economy has been in recovery for five years, the consequences of the recession remain evident. Job growth remains slow and uneven, and many sectors have not recovered the jobs they lost during the downturn. This is particularly evident in the construction sector, which, according to the U.S. Bureau of Labor Statistics, shed 2.2 million jobs between 2006 and 2010 but only gained 309,000 of these construction jobs back between 2011 and 2013. Full recovery — that is, when the national economy will have achieved full employment — is now projected to occur in 2017 or 2018.

Construction was one of the hardest-hit sectors during the recession. The value of total construction put in place, according to data provided by the U.S. Census, decreased from \$1.160 trillion to \$787.4 billion, a decline of 32.1 percent, from its peak in 2006 to the bottom of the business cycle (for the construction sector) in mid-2011. The value of residential construction declined 60.2 percent from its peak in 2006 to its trough in 2011. For nonresidential construction (buildings and nonbuildings), the value of construction activity peaked in 2008 and declined 25 percent over three years to 2011, when it began the recovery that continued through 2013. (See Figure 2.)

Figure 2
Construction Spending in the U.S., 2000-2013
 (In Billions of Current Year Dollars)



Source: U.S. Census, Value of Construction Put In Place

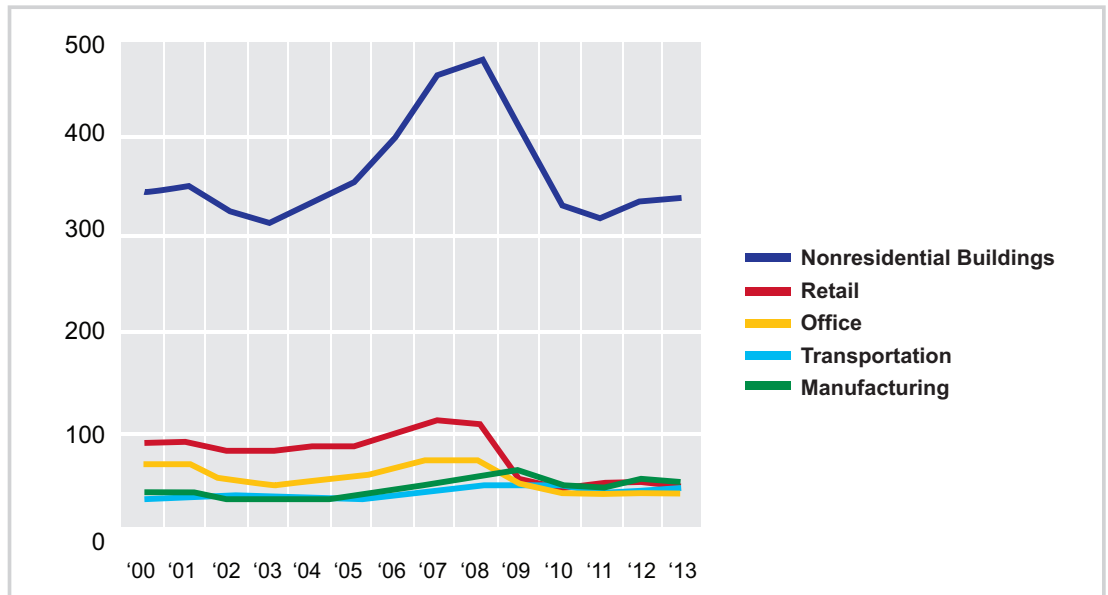
Construction Sector Expands in 2013. It has taken four years of recovery in the national economy to bring the construction sector back to a position that could support broad-based increases in construction spending. In 2013, the total value of construction put in place was up 14.1 percent from its low point in 2011. The value of residential construction spending increased 72.6 percent over this period, accounting for 83.1 percent of the total increase in construction value across all three categories (residential buildings, nonresidential buildings and nonbuildings). During this recovery period, the value of nonresidential building construction expenditures increased 8.8 percent while nonbuilding construction expenditures registered gains in 2010, 2011 and 2012 as a result of government spending undertaken to stimulate the recovery, but then declined in 2013 as government spending tightened in the face of restrictive fiscal policies. Current forecasts show the construction sector continuing to build back to its pre-recession levels of investment and employment by 2017 or 2018.

Residential Construction Gains Strength. The patterns of total construction spending by major category over the business cycle are shown in Figure 2. Residential construction spending peaked as a percentage of total construction spending in 2005 at 56 percent, with its share declining each subsequent year to 2009, when it reached 28.1 percent. Since 2010, residential construction has regained share as nonresidential spending slowed at an increasing rate while the decline in residential construction bottomed out and then began to grow in mid-2011. By 2013, residential construction spending accounted for 37.5 percent of total construction (both building and nonbuilding), and both residential and nonresidential building construction were growing for a second year in a row.

Nonresidential Building Construction Grows in 2013. The value of nonresidential building construction peaked in 2008. In 2009, nonresidential building construction spending declined by 12.8 percent. This contraction accelerated in 2010, with the value of new nonresidential construction dropping 20.7 percent. During this three-year period (2008-2011), the value of nonresidential construction spending declined 33.9 percent. This pattern of decreasing construction spending slowed to 4.4 percent in 2011 and, for several building types, turned positive. Nonresidential building construction spending has increased each year since 2011, although at a modest annual rate in comparison to increases in residential construction spending.

As shown in Figure 3, construction spending for four categories of nonresidential building types — office, retail, transportation (which, in the U.S. Census data set, includes warehouse properties) and manufacturing — has tracked a relatively smooth pattern through each category's respective growth cycle. However, since 2008, the office and retail categories experienced decreased construction spending, while the transportation (warehouse) and manufacturing categories sustained small gains in 2008 and 2009, respectively, before declining again in 2010 and 2011. In 2013, nonresidential construction spending increased in five of the 10 categories shown in Table 6.

Figure 3
Nonresidential Construction Spending in the U.S., 2000-2013
(In Billions of Current Year Dollars)



Source: U.S. Census, Value of Construction Put In Place

Outlook: Residential and Nonresidential Construction. The U.S. economy completed its fifth year of recovery in June 2014, a recovery that has been characterized by uneven growth rates in both jobs and income, a slowly declining unemployment rate and a slow recovery of the residential and nonresidential construction sectors.

Residential building construction spending turned positive in the second quarter of 2011, led by gains in multifamily construction, and is projected to increase each year, with single-family housing construction regaining its normal (equilibrium) production level by 2017. Current forecasts (IHS Global Insight, May 2014) indicate that residential construction spending is projected to increase 4.0 percent in 2014 after gaining 12.2 percent in 2013. IHS Global Insight is projecting accelerating gains in residential fixed investment in 2015, up 19.8 percent over 2014, and in 2016, up 11.4 percent over 2015.

The projected pattern of residential construction points to annual housing starts increasing to 1.02 million in 2014, for a gain of 10.2 percent from 2013 following a strong gain of 18.6 percent in 2013 over 2012. Housing starts are projected to increase to 1.4 million units in 2015 and 1.58 million in 2016. Current forecasts have residential building peaking in 2017 at slightly more than 1.6 million starts and maintaining this equilibrium level over the next several years.

Table 6
U.S. Nonresidential Construction Spending, 2010-2013
(In Billions of Current Year Dollars)

Type of Structure	2010	2011	2012 ¹	2013	% Change 2010-2013
Transportation	\$38.3	\$34.9	\$38.2	\$41.6	8.6%
Healthcare	39.3	39.7	41.8	40.7	3.6
Retail	39.4	43.6	46.3	49.3	25.4
Manufacturing ²	40.4	41.4	46.8	49.4	22.5
Amusement/Recreation	16.9	16.2	15.0	14.4	- 14.8
Education	88.4	84.3	84.6	79.1	- 10.5
Public Safety	11.2	10.2	10.3	9.4	- 16.1
Office	37.8	34.6	38.4	38.5	1.8
Religious	5.3	4.2	3.8	3.4	- 35.8
Lodgings	11.6	8.8	11.4	14.4	25.0
Total³	\$328.6	\$317.6	\$336.7	\$340.2	3.5%

Source: U. S. Census, Value of Construction Put In Place

¹ Revised 2012 data.

² Includes warehouse/flex space.

³ Totals include some miscellaneous state and local government buildings, but exclude spending for nonbuilding construction on items such as communications, power, highways, sewer and water.

Construction expenditures for **nonresidential** buildings increased in both 2012 and 2013, following three years of contraction after peaking in 2008. The pattern of growth within this broad range of building types reflects a combination of both unevenness and consistency. Transportation, retail, manufacturing, office and lodgings have registered construction spending gains in both 2012 and 2013, while construction spending for recreation and religious buildings decreased in both years. Construction spending for healthcare, education and public safety increased in 2012 but decreased in 2013. Furthermore, these construction spending increases and decreases have been largely double-digit percent changes from one year to the next. This variability suggests that nonresidential building construction is still suffering from the unevenness of supply and demand conditions, and that sustained growth will require further expansion of the broader economy before all segments of the building industry are able to enjoy sustained growth.

Construction employment, which declined by 2.2 million jobs between 2006 and 2010, added net new jobs beginning in 2011 and has now increased for a third year, gaining 309,000 net new jobs between 2011 and 2013. The nation added a total of 181,000 construction jobs in 2013.

Outlook: The U.S. Economy. The importance of the construction sector to the recovery of the U.S. economy is well established. The recovery's unevenness during its first five years (dating from June 2009) can be partially attributed to the magnitude of the correction that the construction sector endured, which extended its recession to mid-2011. Now that residential and nonresidential building construction spending are increasing, the U.S. economy has gained traction in spite of its disappointing performance in 2013, when GDP was up only 1.9 percent. This slowing of the recovery in 2013 was tied to significant reductions in federal government spending, combined with weakened consumer and business confidence and continuing turbulence in the global economy. Still, the construction sector's gathering strength in 2013 helped to buttress the national economy during this period of reduced government spending. With that adjustment now largely history, the forecast for 2014 and on through 2017 and even to 2019 is for a solid economic performance, including accelerated gains in construction spending for both residential and nonresidential buildings through 2017.

While the outlook continues to be good for both residential and nonresidential building construction spending, the construction industry's performance in 2014 has already suffered some downward revisions in its forecast, pushing some of the spending projected at the beginning of the year to occur in 2014 into 2015. This has extended the full period of recovery for the industry, as described above, to 2017. The first quarter of 2014 was seriously impacted by weather-related disruptions that directly affected the start of new construction projects as well as influenced almost all other aspects of the economy. Job growth was hampered by lost work days and closed businesses, transportation delays and increased costs undermined the economy's growth, and consumers and businesses were discouraged from their normal spending and investment patterns. As a result of these weather-related cost increases, delayed hiring, and lost wages and salaries, in May the GDP forecast for the year was revised down from 2.8 percent growth at the beginning of the year to 2.4 percent growth. As a result, construction activity and all major sectors of the economy are projected to grow more slowly in 2014 than had been projected initially. Still, the economy will perform more strongly in 2014 than it did in 2013, and it is still projected to register growth rates above 3 percent each year from 2015 to 2017, coinciding with an equally strong performance from the construction sector.