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Beyond Estimation

Market Outlook – Q4 2016

Vermeulens market reports are based on actual selling prices in the Institutional-Commercial-Industrial construction industry. Forecasts are based on leading indicators, and historical comparative analysis.

- **Construction Prices** increased an average of 6% in 2016 depending on location.
- **Construction Cost Trendline** due to five consecutive years of above average cost increases, the slope of the construction cost trendline has increased to 3.3%
- **Energy and commodity prices** increased by 11.4% in 2016 but remain at levels seen in the 1990's due to the strength of the US currency.
- **Consumer Price Inflation** increased by 1.7% year over year and monthly increases in the fourth quarter of 2016 should show similar annualized growth.
- **Construction Dollar Volume** has increased by 5.8% year over year (Nov 16/Nov 15). Most of this increase is attributable to price increases since construction employment increased 1.6% in 2016. Non-Residential spending has declined 1% year over year (Nov 16/Nov 15).
- **NYSE:** The stock market has reached all-time highs however, volatility continues to fluctuate in a range consistent with the previous 3 years.
- **Growth in Employment** Q4 job growth has averaged 165,000 jobs per month in comparison to 180,000 jobs per month average for 2016.
- **Construction Job Growth:** Q4 2016 added 28,000 jobs nation-wide and 102,000 jobs for the year of 2016. Wage and profit increases in the sector will continue to draw employment from new entrants and other sectors.

Market Watch

Our guiding philosophy is that inflation and employment targets will propel monetary policy, and subsequently construction prices. This approach has been successful at forecasting price movements through the last recession, and current economic cycle.

We are nearing full employment in the construction sector and expect to see significant wage increases. Price increases are also attributed to contractor margins sufficient to bring significant supply to a growing market.

Although the target range for fed funds has increased, continuing low interest rates are good for stability in the interest rate sensitive construction sector.

"The Committee expects that, with gradual adjustments in the stance of monetary policy, economic activity will expand at a moderate pace and labor market conditions will strengthen somewhat further. Inflation is expected to rise to 2 percent over the medium term as the transitory effects of past declines in energy and import prices dissipate and the labor market strengthens further. Near-term risks to the economic outlook appear roughly balanced.

The Committee decided to raise the target range for the federal funds rate to 1/2 to 3/4 percent. The stance of monetary policy remains accommodative, thereby supporting some further strengthening in labor market conditions and a return to 2 percent inflation." https://www.federalreserve.gov/monetarypolicy/files/monetary20161214a1.pdf

The table below looks at several key economic indicators that drive construction volume and costs. On balance, current indicators support stable construction growth in the short-term. Some shortages in local markets are maintaining construction prices above the Construction cost Trendline. Market activity and cost escalation continues to vary by region and project type.

Indicator		Current	Forecast
CPI Inflation	*Stable*	↔	↑
ICI Demand	*Stable*	↔	↑
Nom Interest Rates	*Level*	↔	↔
Real Interest Rates	*Low*	↔	↔
Government Spending	*Low*	↓	↔
Government Deficits	*Negative*	↓	↔
Financial Assets	*Leveling*	↔	↑
Real Estate Assets	*Stable*	↔	↑
Construction Prices	*Rising*	↑	↔
Construction Employment	*Rising*	↑	↑

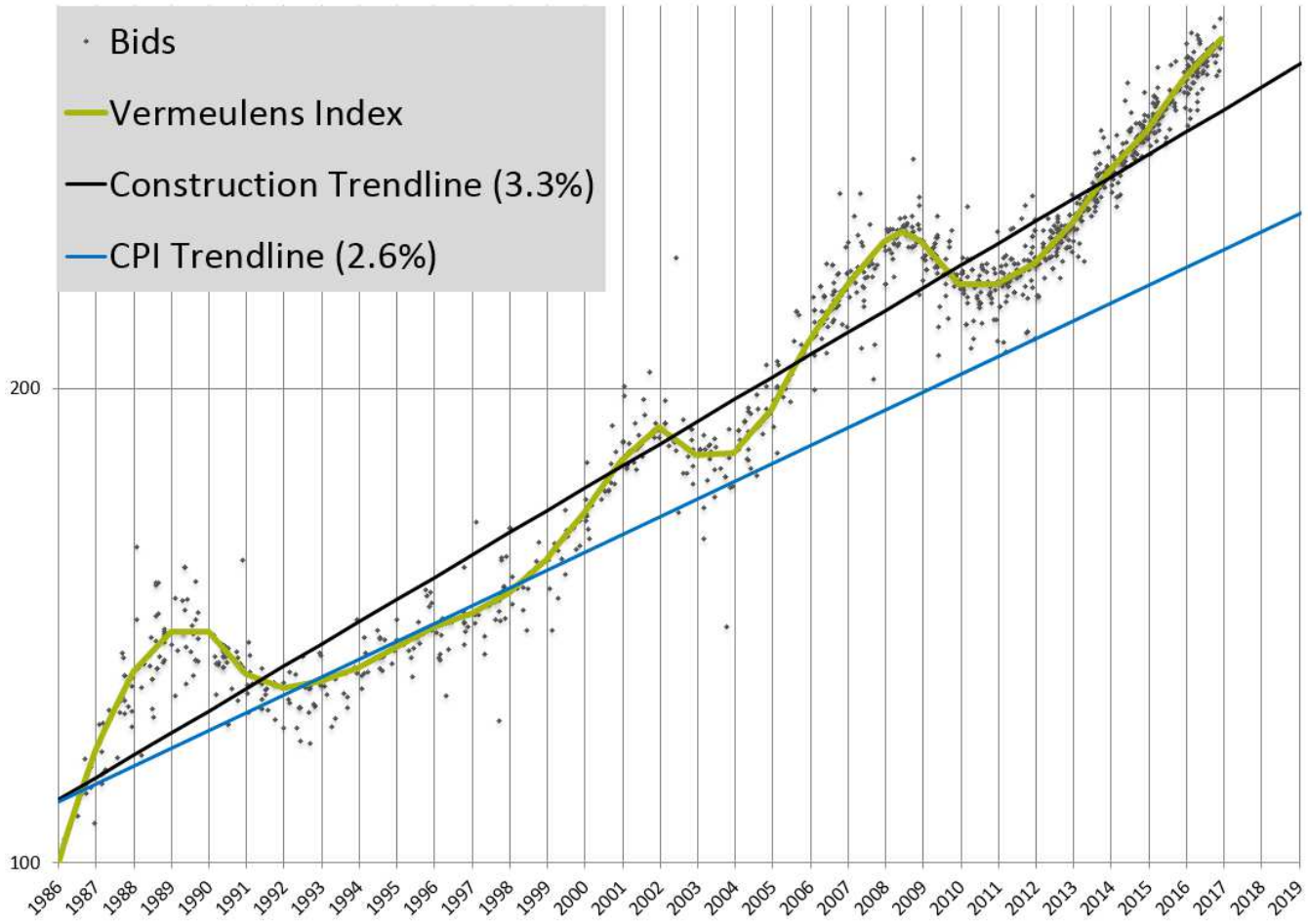
Vermeulens Construction Cost Index

- **As inflation in other sectors of the economy**—commodities for example—moderate, and real interest rates reduce, escalation in the construction sector will continue to have room to increase at a higher rate.
- **Price increases for 2016** nationally averaged 6% annually.

For the past 30 years, construction costs have trended toward a 3.3% annually compounded escalation rate. The rate of escalation seen in construction costs are related to the goal of 2 - 3% annual inflation and the monetary policy used to achieve this goal. Following a decline in 2014 due to energy prices, year over year CPI inflation is trending below the Federal Reserve's long-term targets.

Following the global recession construction selling prices for institutional projects fell by 14% from their peak in 2008. During 2011, Vermeulens saw an average selling price increase of 3%. This was followed by a 6% increase in 2012, 8% in 2013, 6% in 2014, and 8% in 2015.

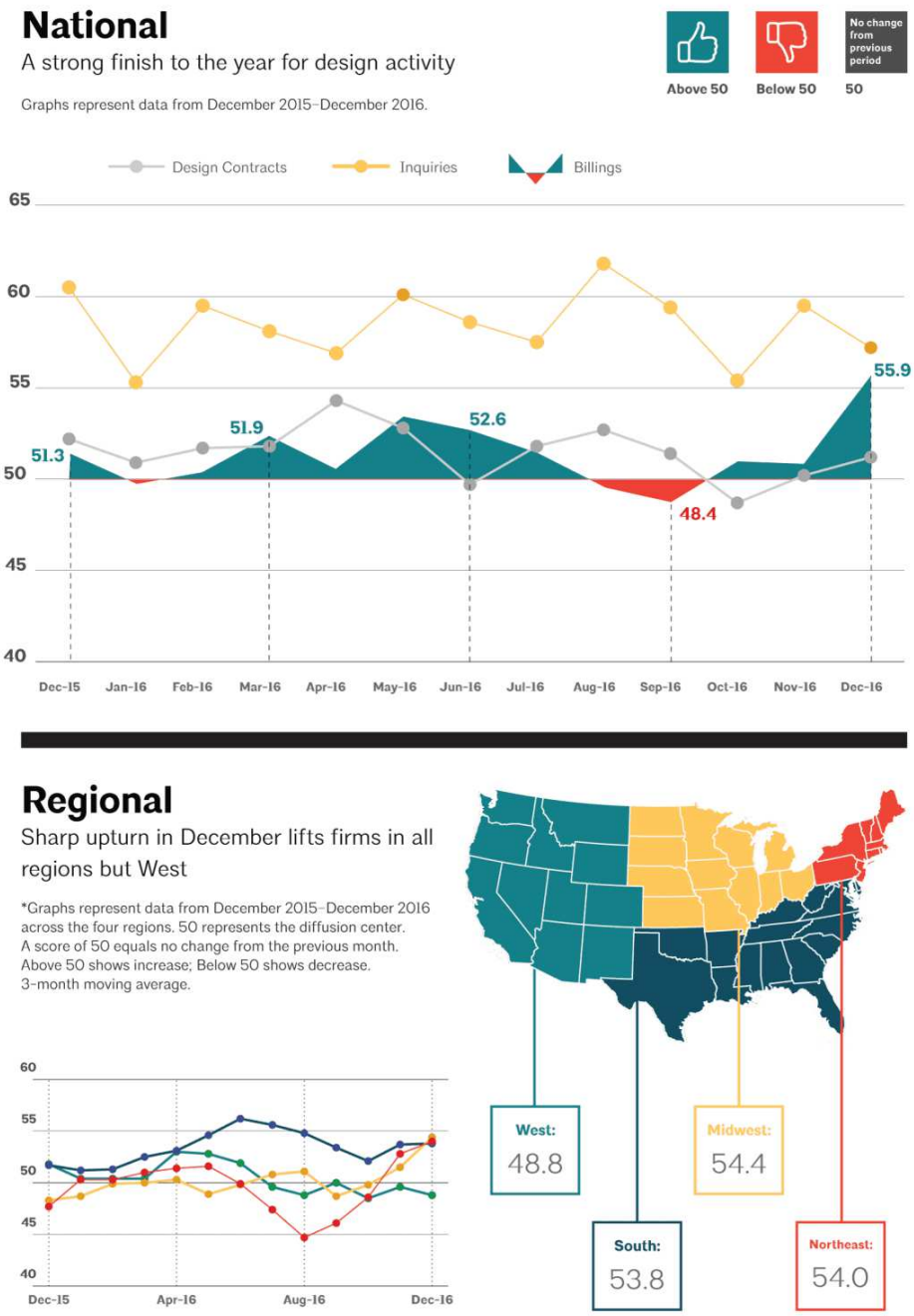
The chart below illustrates bid prices for Institutional Commercial Industrial (ICI) construction projects relative to the Construction Trendline (1986 = 100) and the 2.6% CPI Trendline.



AIA Billings

Architectural billings Are a leading indicator for future construction volume. A score greater than 50 indicates growth. Design fee billings typically indicate construction volume 9-12 months in advance.

Architectural Billings were strong in the fourth quarter of 2016 with three consecutive billing increases**.**



www.aia.org/pages/26736-abi-december-2016-architecture-firms-report

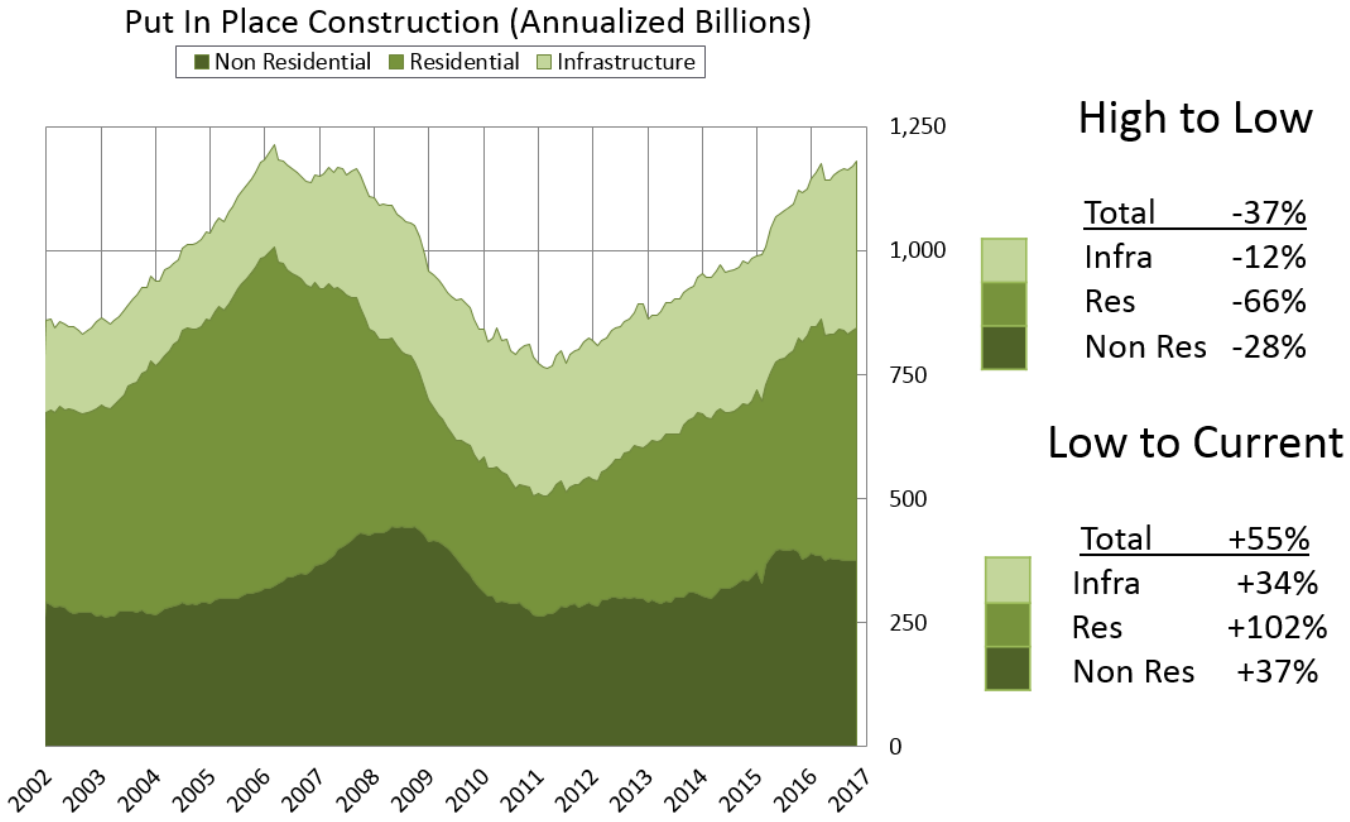
Put In Place Construction

Construction dollar volume has increased by 5.8% year over year (Nov 16/Nov 15). Most of this increase is attributable to price increases since construction employment increased only 1.6% in 2016. Non-Residential spending has declined 1% year over year (Nov 16/Nov 15). Construction dollar volume is the number one driver of construction prices. As volumes increase and contractor bidding opportunities and backlogs grow, the margins included in a bid will grow.

Residential dollar volume has increased 7.6% year over year.

Non-Residential construction spending has seen a 1% decline year over year. Continued weakness in Non-Residential construction spending may result in reduced escalation in this sector.

Infrastructure spending has offset the non-residential decline to balance the total put in place construction level.



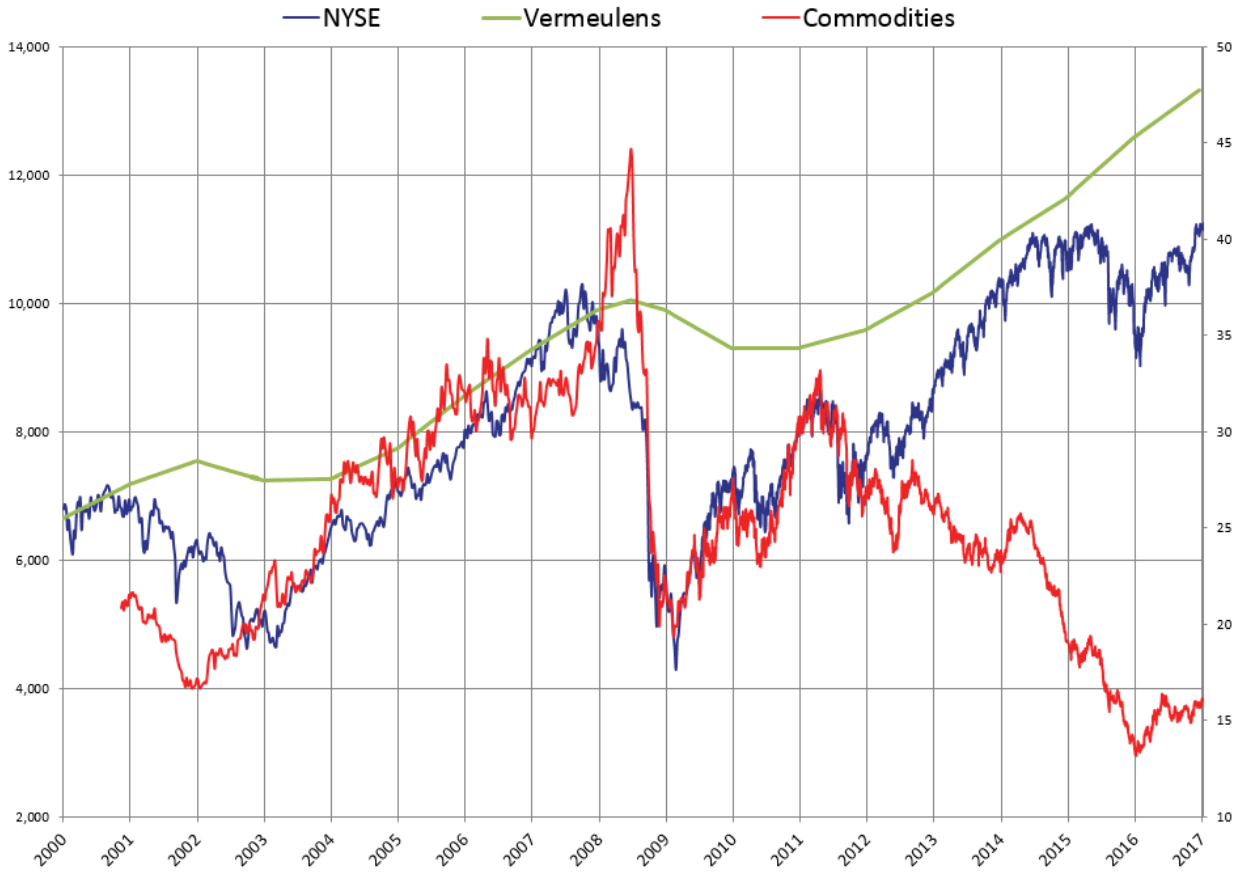
http://www.census.gov/construction/c30/c30index.html

The NYSE and Commodity Prices

Commodity price declines stimulate the economy in general and allow room for employment, wage, and profit increases in the construction sector. Volatility in financial markets is likely until the economy restructures.

The NYSE (blue line) is an indicator of construction prices (Vermeulens index green line). Improving equity markets provide capital and investment spending for construction.

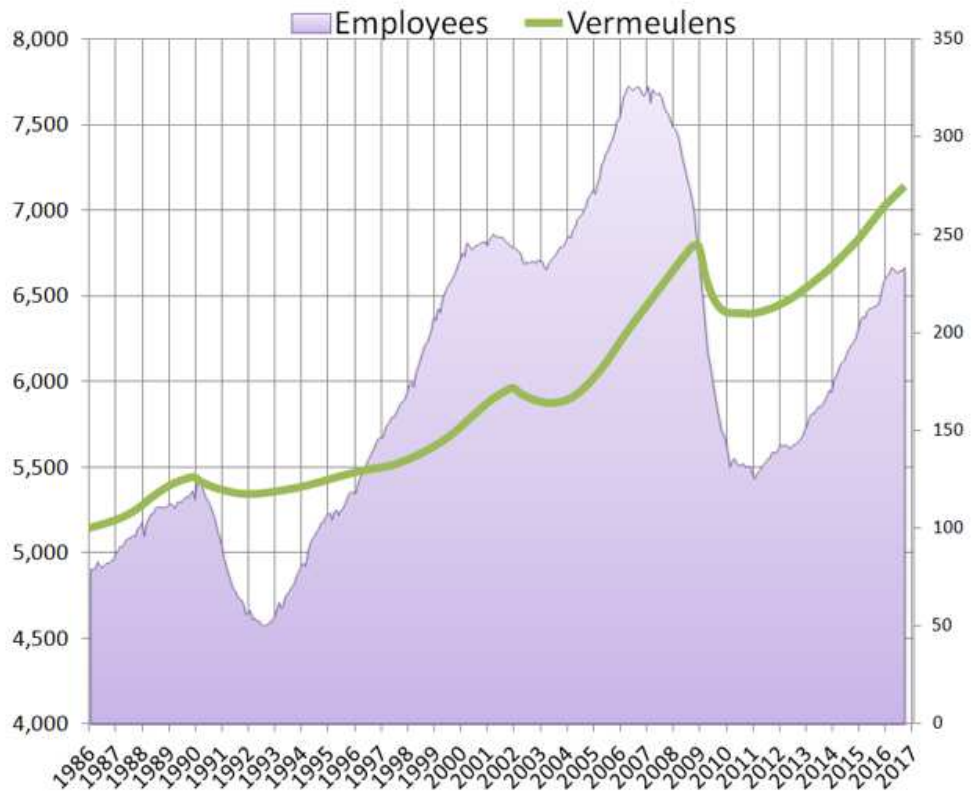
Commodity Prices (red line) are an input but not an indicator of construction prices. Economic growth since 2011 has been bolstered by lowering commodity prices. The energy sector is particularly important as it underlies all economic activity. Commodity prices appear to have stabilized at a reduced level, which will reduce the room for inflation in other sectors such as construction.



Labor Market

Construction Employment Peaked in 2006 and fell by 30% or by 2.3M workers because of the financial crisis. Growth in construction activity since 2011 has increased construction employment by 1.3M workers. Wage increases in the construction sector will expand the labor pool.

The inflationary level of employment growth has reset to a lower level as workers have left the construction labor market.



High to Low
Total
-8.7M (-6%)

Construction
-2.3M (-30%)

Low to Current
Total
+15.1M (+12%)

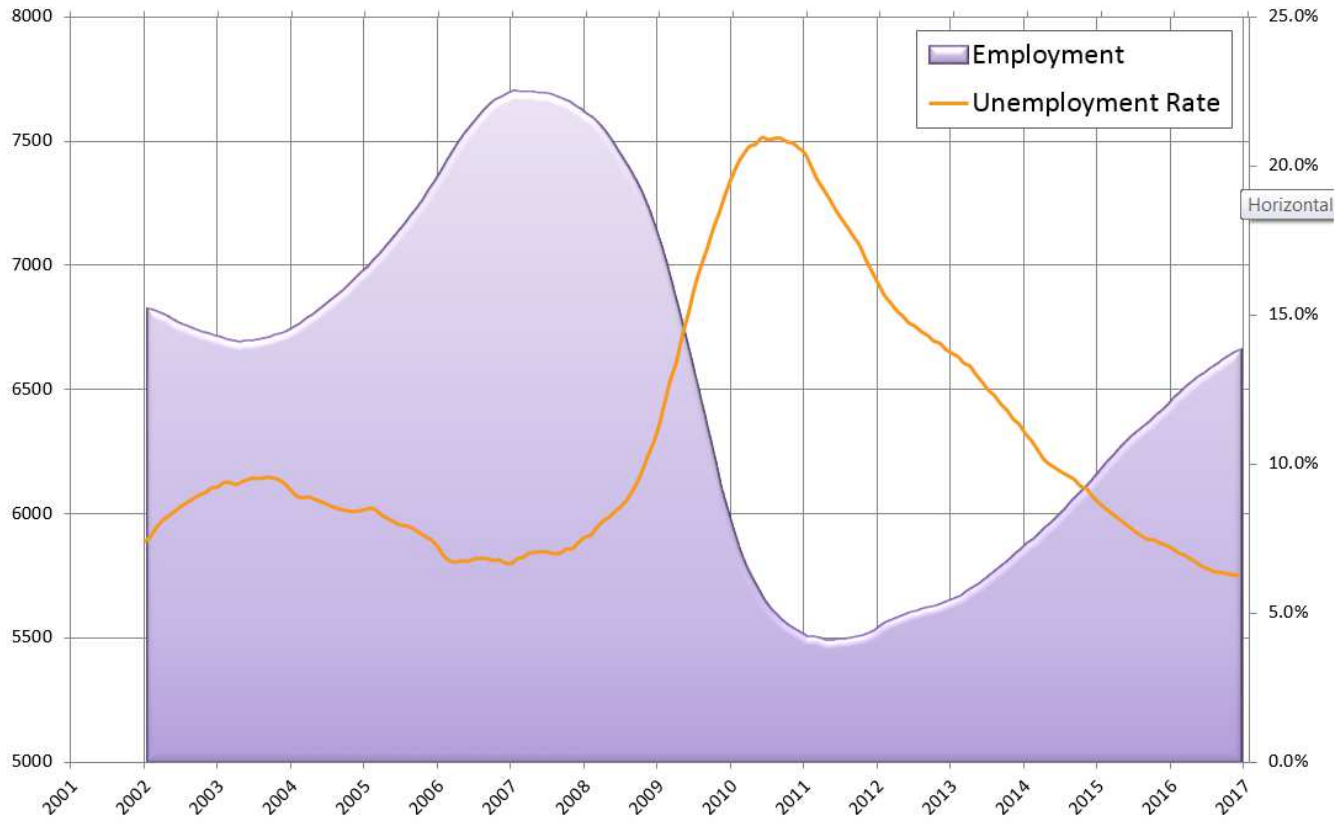
Construction
+1.2M (+20%)

http://www.bls.gov/

Construction Unemployment Rate Reaches Full Employment

- **Unemployment** fluctuating between 4 - 6% will tend to put upward pressure on labor costs similar to 2004-2007.
- **Construction Job Growth** was 28,000 this quarter.
- **Construction Labor Force Growth:** Wage and profit increases in the sector will draw new entrants as well as restructuring from other sectors of the economy (energy or exports, for example).

The Construction Unemployment Rate in the US has been cycling downward and appears to be stabilizing near the benchmark established in the mid 2000's.

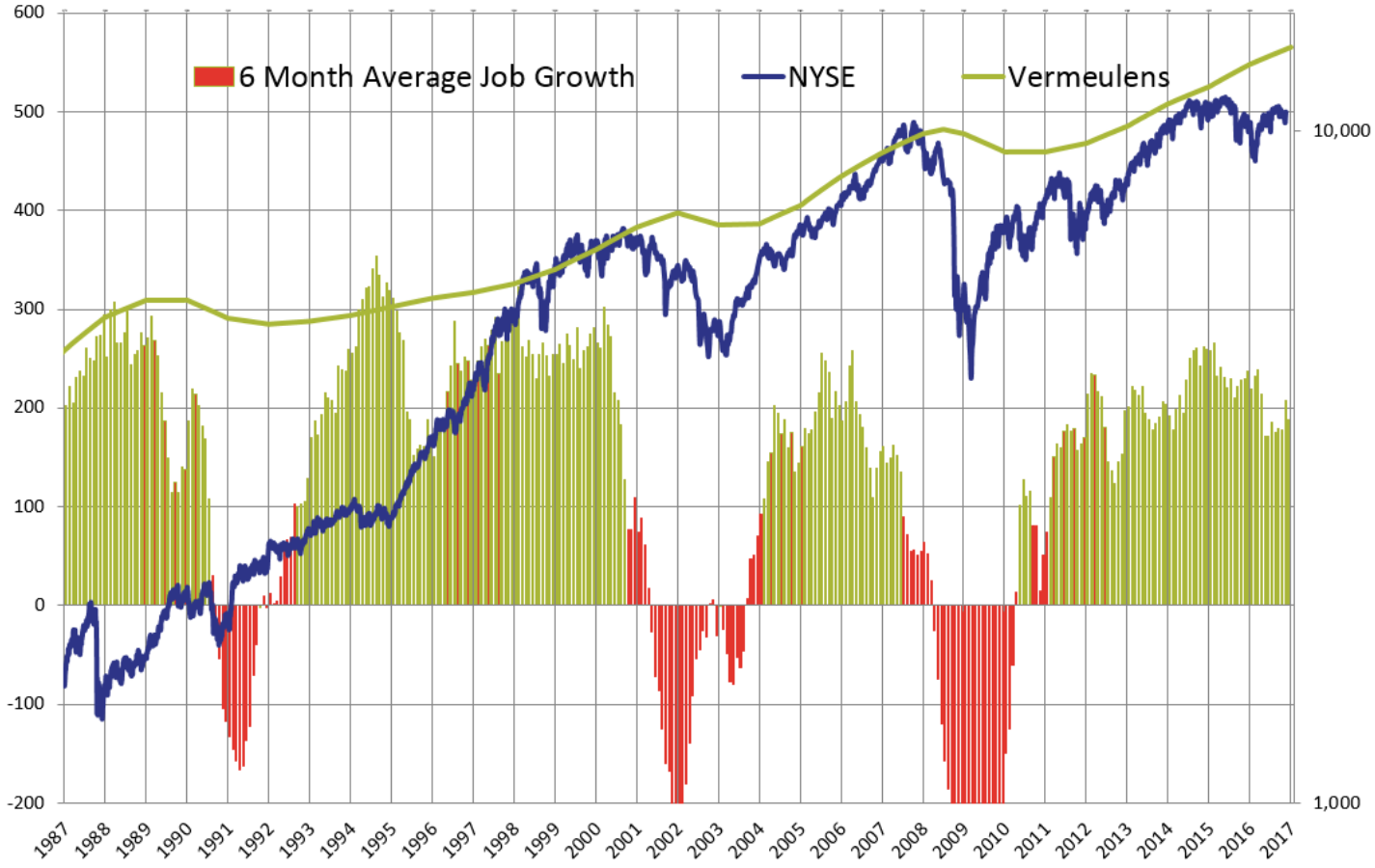


http://www.bls.gov/

Total Jobs & Market Performance

Total Jobs in the US economy continues to grow at a healthy rate averaging roughly 180,000 jobs/month in 2016.

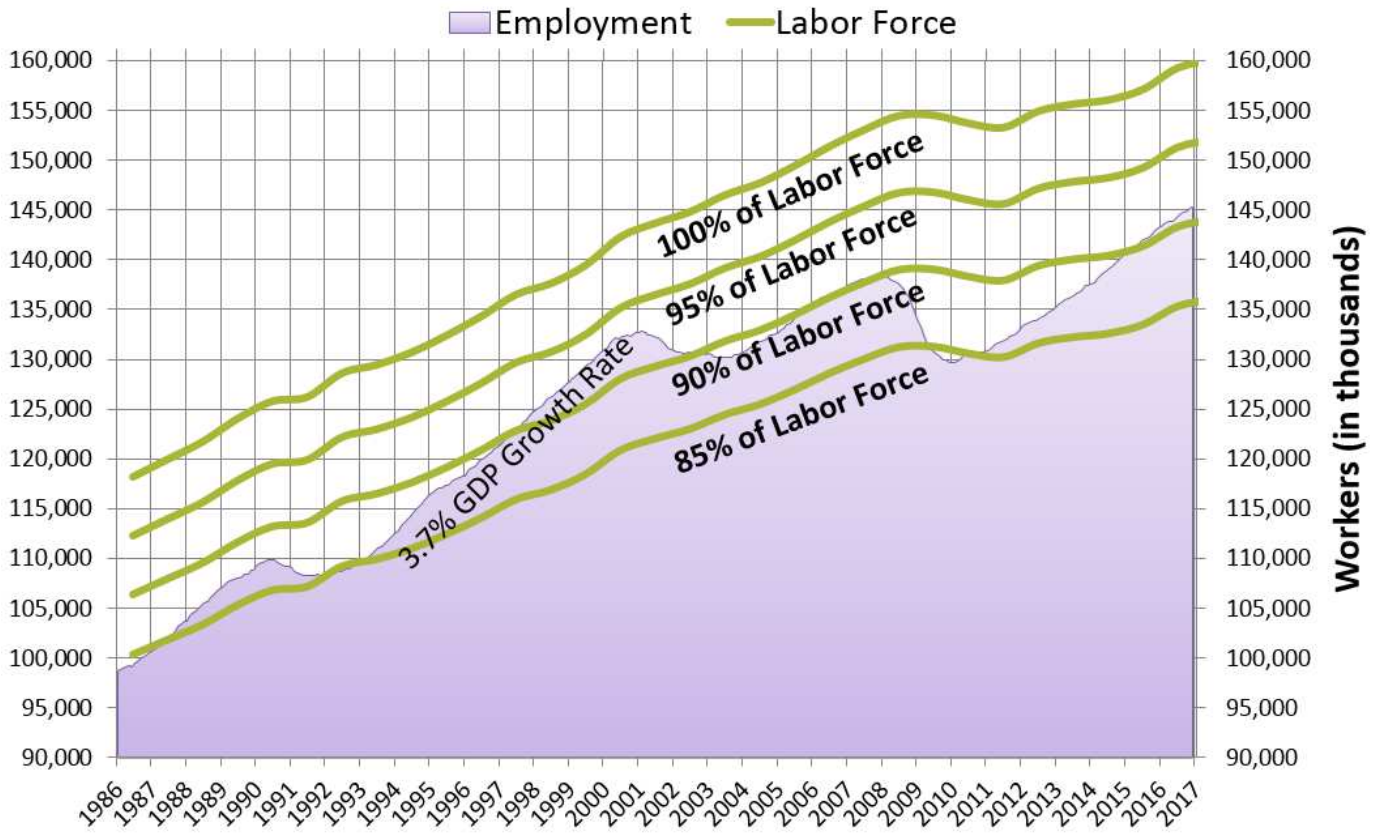
The chart below removes short-term fluctuations in job growth by looking at a 6-month moving average of a job growth. Dips in job growth temper wage demands. Negative job growth accompanies financial sector recessions. Sustained periods where job creation remains below 100,000 jobs/month has accompanied dips in construction pricing as illustrated by the red bars below. A recession is accompanied by job growth rates below the 100,000 jobs/month mark.



Employment Percentage of Total Workforce

- **Total Employment** still has room to grow.

The chart below shows total employment as a percentage of the US work force. The Federal Reserve will accommodate growth until full employment puts inflationary pressure on consumer prices above the 2% target. The workforce in the US continues to expand so the economy must produce at least 100,000 jobs/month to remain neutral. The Federal Reserve will continue to support strong employment growth over the medium term with low interest rates.



Construction Labor Growth Rate

- **Regional Imbalances** in Capacity Utilization Are Reducing.

Construction Labor Growth Rate is calculated by the current 12 month average in construction employment relative to previous years 12 month average in construction employment. As seen by the top 20 US Cities (by GDP) half of the major cities are above average construction labor growth.

Would you like a Market Analysis of Your Sector?

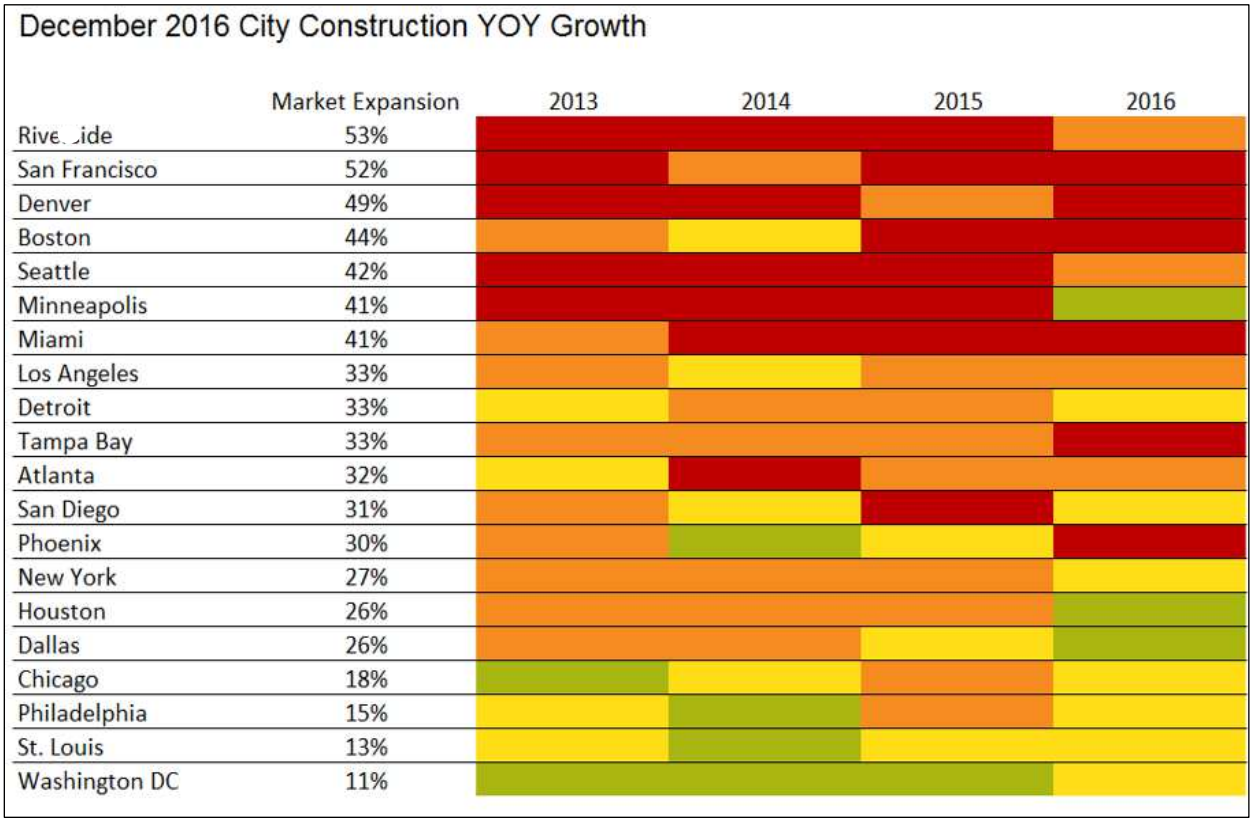
We will prepare a market outlook for your local area for your future and existing capital projects.

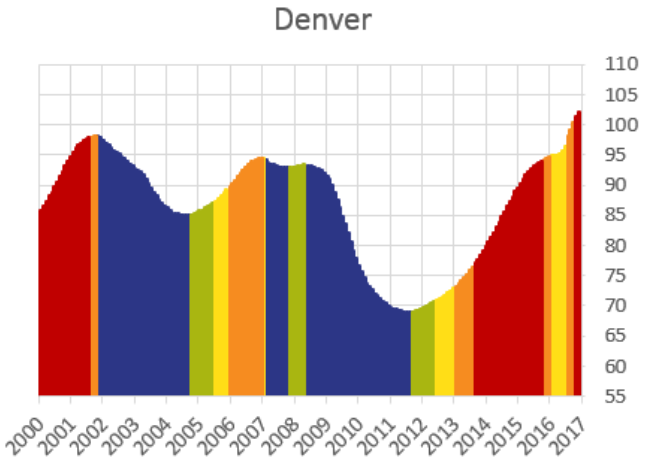
Sample University of Anywhere Market Outlook

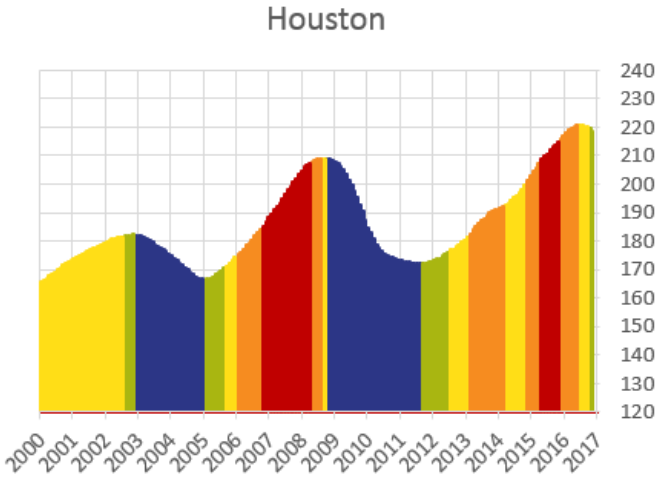
Forecast - Local Trend

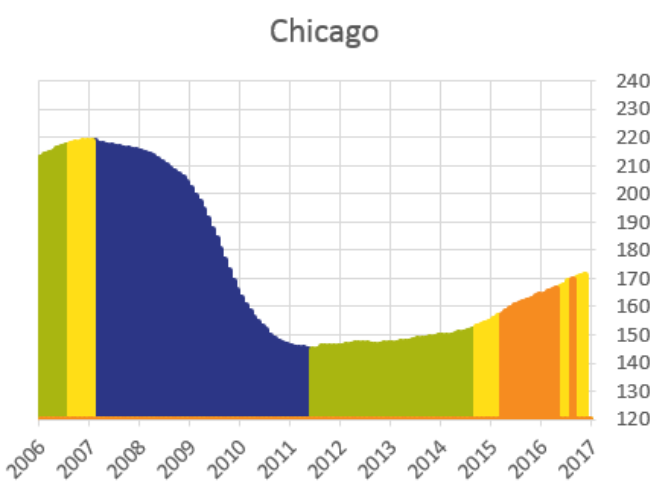
Inflation in local markets is driven by supply and demand in that area. Total expansion is the percentage increase from the previous trough.

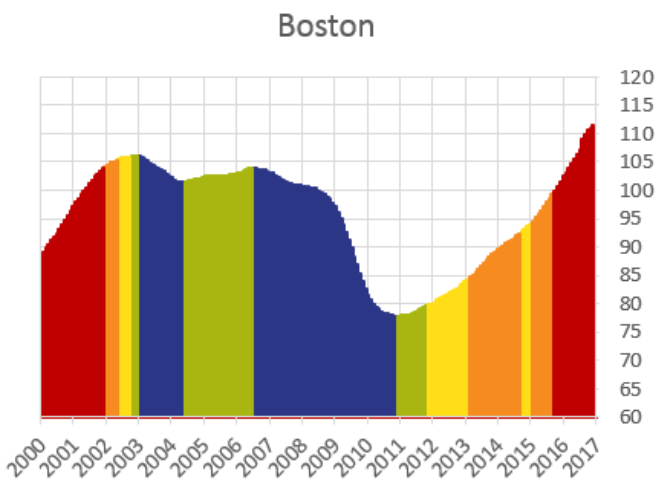
High Growth **Above Average Growth** **Average Growth** **Below Average** **Contracting Market**











Regional Construction Escalation Ranges

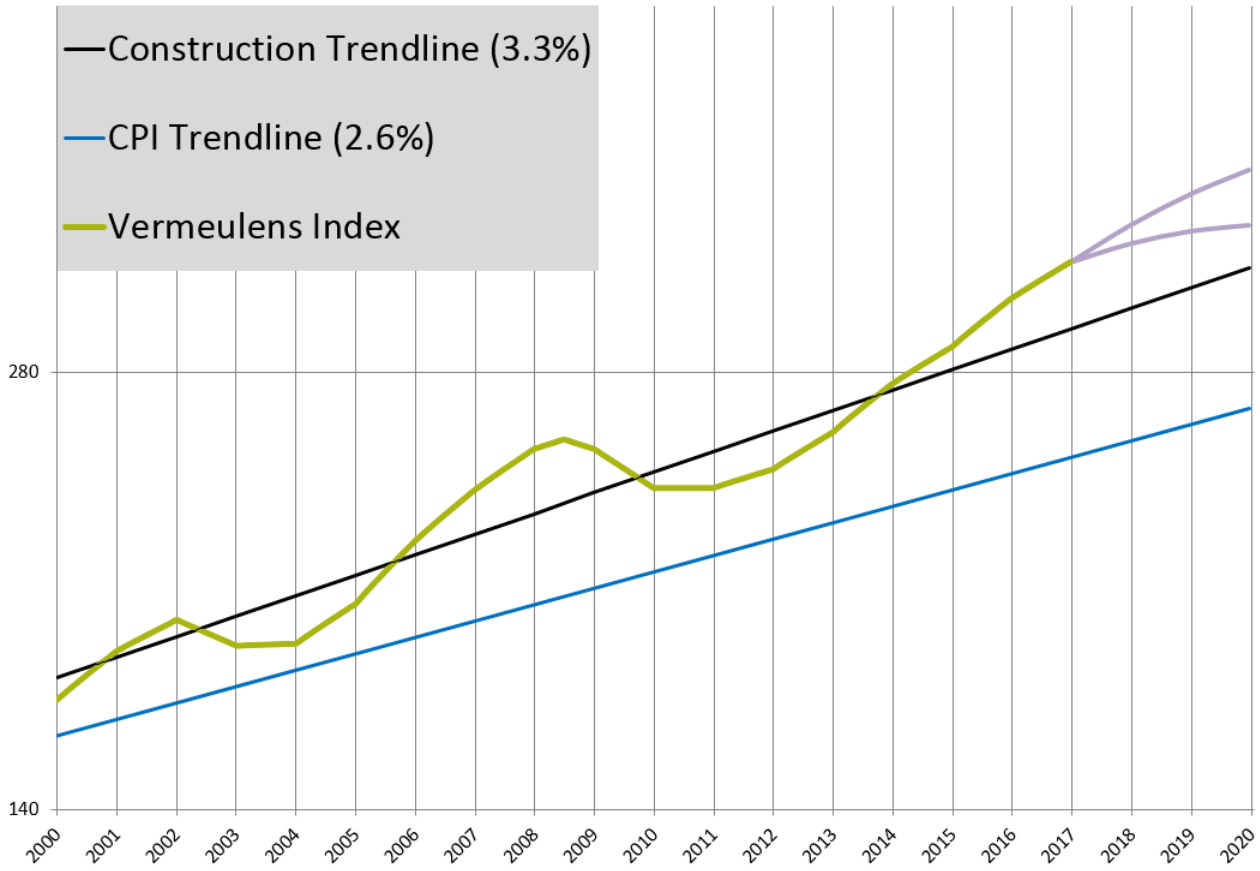
Growth	Forecast
High	7% - 9%
Above Average	5% - 7%
Average	4% - 5%
Below Average	3% - 4%
Contracting Market	TBD

Contact Blair Tennant for an in depth Analysis of Your Sector. Blair Tennant 214 789 2304 or btennant@vermeulens.com

Forecast - National Trend

- **Construction prices** are firm and stabilizing above the long term Trendline.

With the current labor, market at capacity, and continued stable construction volume, construction costs will remain above the Construction Cost Trendline for the medium term.



Have a Beyond Estimation® Market Outlook Presentation to the Thought Leaders in Your Office.

If you would like an in-depth Beyond Estimation® Market Outlook, AIA accredited presentation to the thought leaders in your office, please Contact your local Vermeulens office. See contacts on last page.

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Vermeulens Online Forums

Regional and National Construction Escalation Forum webinar
What should owners budget for cost escalation in the current economy? What pricing structure should we use to accurately estimate costs for projects? This presentation will explore trends in real exchange rates, construction volumes, and major global construction inputs such as oil, steel and copper. Conclusions from these trends will provide the attendees with the understanding of micro and macro global economic drivers and their role in construction costs

Join us for this Webinar - Thursday, March 16, 2016 - 01:00 - 02:00 PM MDT by registering for this event now!

Find out more and register here

Market Outlook Spring Presentations at Tradeline in San Diego
Please join James Vermeulen and Melissa Chabot, for the Tradline presentations in the spring.

They would be pleased to meet you over a coffee at the conference to see how Vermeulens can help your team, and expand our business together. See contacts on last page.

Mounting pressure on construction costs will affect all research projects on the drawing boards and in the pipeline. Attend this session to see new pathways to better pricing and more accurate budget figures. James and Melissa deliver construction cost forecasts based on recent Congressional spending cuts, commodity prices, and cost data from more than 100 projects. Using analyses of equities, GDP, and construction labor markets, they illustrate what to expect for construction pricing on a regional basis for the next two years. They profile what organizations are doing to develop bid and purchasing strategies that lock in costs and reduce risk.

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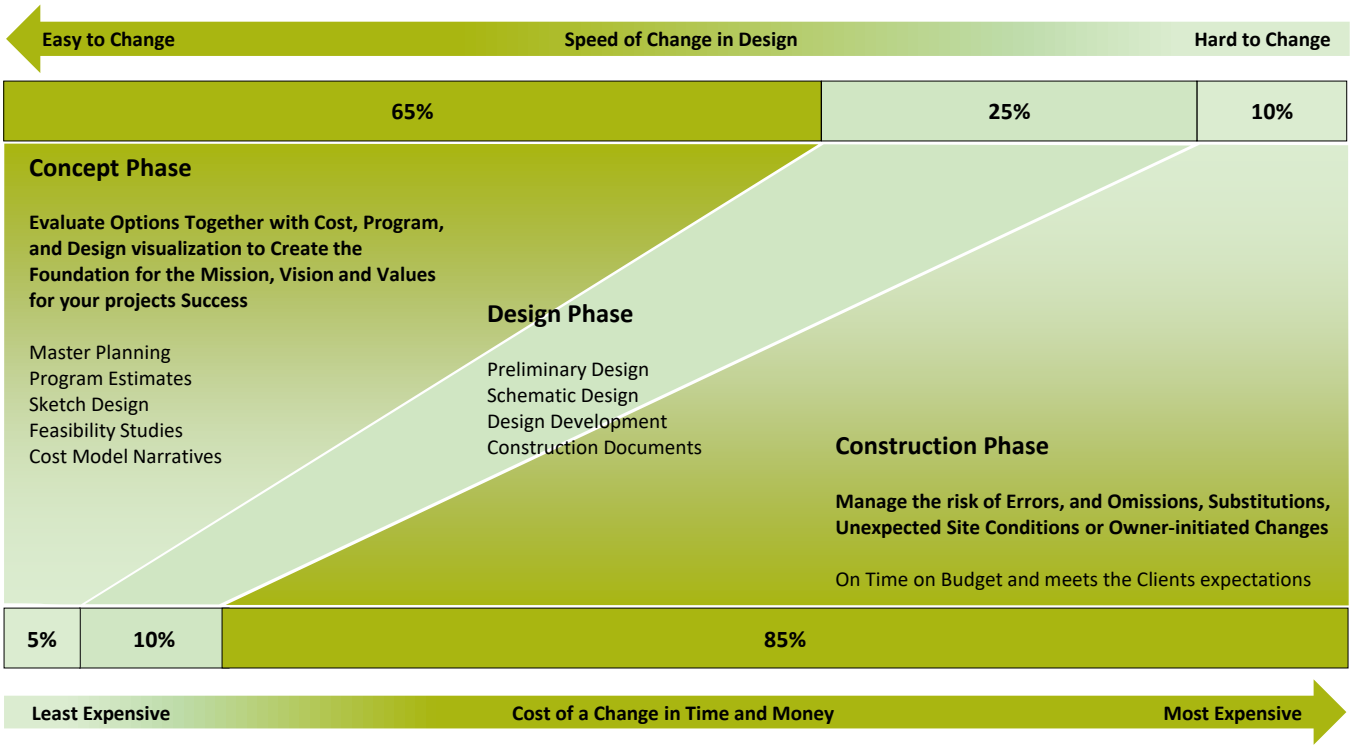
Stay off the Redesign Treadmill - Hire Vermeulens for an Estimate of Concept Phase Costs for:

- Master Planning
- Program Estimates
- Preliminary Design
- Feasibility Studies



Vermeulens Concept Phase Estimates Can Create the Foundation for Your Capital Projects Success

Contact your local Vermeulens office:

Boston – Marisol Serrao, liaison for Vermeulens in the Eastern States 617 201 3949 or mserrao@vermeulens.com
Toronto - Wendy Carter, liaison for Vermeulens in Canada 905 787 1880 or wcarter@vermeulens.com
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Los Angeles - Melissa Chabot, liaison for Vermeulens in the Western States 310 242 5856 or mchabot@vermeulens.com

Vermeulens cost control service gives our clients the greatest possible value and results for their projects. Should you wish for a personal presentation please contact your local office.

Thank you,

Peter Lucking
Associate, Construction Economist

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