KILEYADVISORS

2016

Annual Greater Houston Construction Market Forecast

Executive Summary

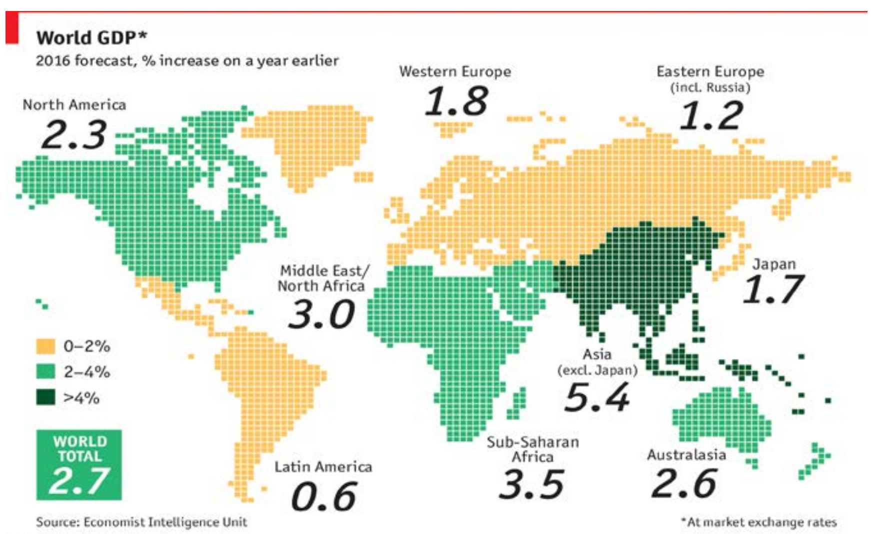
- *The daily diet of bad oil news can be depressing, but there is no need for overreaction on the part of local contractors. Houston will have ample work in most traditional markets. The markets are slowing, not stopping.*
- *Two major international trends will impact Houston as an international city - slowing global GDP growth, which is causing record mergers and acquisition activity, and a weakening demand for energy. Racing technology adaptation, which is allowing companies including energy and construction, to know and do more for lower costs.*
- *Consequently, there is a significant oversupply of oil as the Saudi-lead OPEC cartel is leaving their spigots wide open and, US producers have dramatically lowered their cost/bbl. so they can keep producing. Non-OPEC members will cut production this year, but Iran and Libya can offset any gains.*
- *Nothing on the horizon right now appears to change either trend. Global growth will remain sluggish as China converts from a top down infrastructure and manufacturing economy to a consumer driven, services economy sending commodity markets and commodity supplying countries spiraling lower. Technology is once again in a boom phase attracting record amounts of capital and becoming a strategic separator in all industries and a total disruptor in others (Uber/Air B&B.)*
- *Houston will have lower employment and job growth but both metrics will remain positive. Money is still available to fund projects but with significant equity and pre-lease requirements. Downsizing by energy companies has created a substantial amount of sublease space. Other Texas markets will be stronger, especially Austin.*
- *The following Houston markets will be slower: Multifamily, Hospitality and Residential. General Purpose Office and Light Industrial, after being on fire, will return to normal. Churches will remain steady as Heavy Industrial, K-12, Higher Education, Public Work, Retail and Medical will be strong in 2016.*
- *Strategic Challenges remain: the craft worker shortage is real. Immigration reform is critical. The "War for Talent" escalates. Delivery systems and means & methods evolve, particularly prefabrication and other off-site build/on-site install methods. Technology applications are now expanding into the management of the "big data" that projects produce.*
- *The overall markets could drop 5%-15% 2016, in light of what we know now. Longer range, till 2040 all projections for continued job and population growth are bullish. The same is true for all other major Texas markets.*

Change is the Only Constant

The New Year dawns with troubling headlines. Oil prices are plummeting; the stock markets in the United States and China are highly volatile; there are new tensions in the Middle East, and there is another 10 months of the ceaseless political rhetoric here that shows the best of our democracy and the worst of our partisan decisiveness. It would be easy to get discouraged or depressed, but for contractors, however, there is no need. The picture for 2016 is different, not dire. There is decent work in many market segments, just not quite as much as the last few years. And there are changes in motion, worldwide, that will impact this year and beyond. As a matter of fact, change is the only constant!

Global Trends with Local Impact

Two trends bear a closer look. The first is that Global GDP growth is clearly slowing, as the Economist magazine's chart below shows. It is estimated to be only 2.7% this year, when 3% annually is considered the minimal level by economists to consider a country growing. All the developed economies are below 3%, (many below 2%), plus there is definite slowdown in the traditional bright spots; the "emerging countries" Brazil, Russia and China in particular, (India is the welcome exception). And, for the first time, there are no countries, even the smaller, evolving ones, where there will be double-digit growth (Turkmenistan is this year's champion at 8%). There are also no consistent signs of a dividend from lower energy prices, as of yet. This energy dividend was predicated by the International Monetary Fund (IMF) to add 0.5% and 0.6% respectively to the global and domestic GDP numbers, and so far its lack of impact puzzles the experts. This global picture is relative to our Houston market, there are 5700 international companies based here, according to a Greater Houston Partnership (GHP) report.



Changes at work in China are the primary cause of some of this slowdown; they are converting from a government-driven, top down economy to a consumer-driven, service-based one. This means the tremendous investments they have been making in infrastructure (roads, bridges power plants, ports, airports, manufacturing plants, schools , high-revise city living structures, etc.) have slowed to a trickle compared to the last 10 years in particular. The consequences are multiple and quite brutal. Their GDP will drop by at least 0.5% per year; commodity prices have plummeted significantly worldwide, and those countries that supplied all the raw ingredients for the building products used, most especially Brazil, Russia. Australian, Indonesia and Mongolia, are really suffering. It hurts US manufacturing exports too.

The scale of their economic growth is historically unprecedented and truly unbelievable. When the late President, Richard Nixon went to China in 1972, it is estimated that their GDP was a$110 Billion; in 2015 it is estimated to be $11-$12 Trillion! (It is second only to the United States at $17 Trillion.) Another staggering statistic is that between 2010 and 2015, according to former Treasury Secretary, Lawrence Summers, China poured more concrete than the United States did in the ENTIRE Twentieth Century! They have 15 mega cities with more than 15 million people each and 40 cities with over 1 million people each. This past year they added 1 Million jobs, despite the drop in GDP, as service jobs require 30% more labor per unit of output than do manufacturing jobs. The consumer economy appears to be growing, Apple's sales in China increased 80% last year; Land Rover's 35%.

China is also attempting to grow through an initiative called "One Belt, One Road" where they are attempting to recreate and strengthen their trading partners along the old "Silk Road." They are making meaningful investments in their roads, rail and ports, and this project is "putting smiles on the leaders of 64 nations, according to the Eurasia Group's latest report. However, their economy should stay under 7% GDP growth for the foreseeable years, which will impact our market too.

This semi-stagnant global GDP growth is projected to continue. Nothing is on the horizon to truly change it. Productivity growth is miniscule, despite the increasing use of technology, another puzzling fact. Many speculate that it will take a more affluent middle class, significant increases in capital budgets and a massive investment in infrastructure to change it in the developed economies, none of whom have the unified political will to do it. This tepid state is now being referred to as the "new normal and more pejoratively by the candid, well-tailored head of the IMF, Christine LaGarde, as the "new mediocre." Perhaps she is more accurate.

Technology Development is on Steroids, Again!

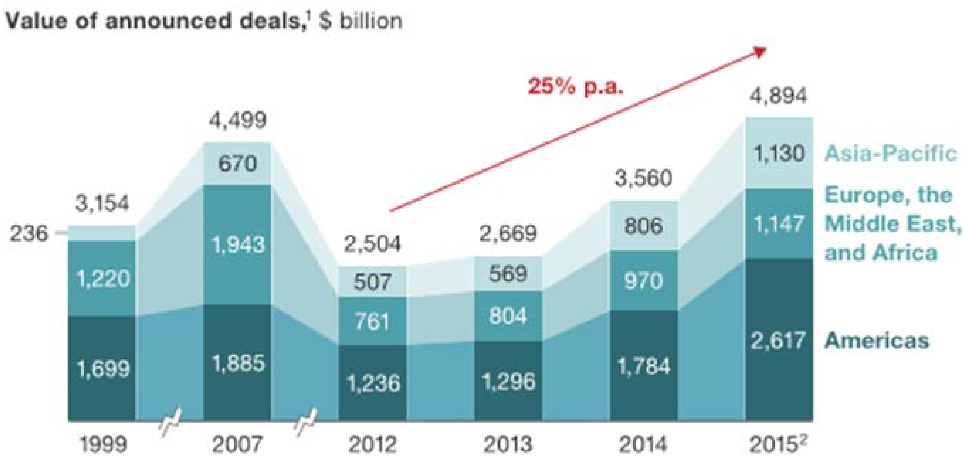
It appears there is another technology boom and once again it is the darling space of the Venture Capitalist and Private Equity Funds. We are learning new terms; “unicorns”, are companies with a $1 Billion dollar initial public evaluation and “decacorns” are companies with a $10 Billion dollar initial public evaluation, and seven of the last ten decacorns have been technology companies. The real hot ones appear to be those that are referred to as “platform companies” where the technology itself is the company (e.g Facebook, Uber and Air B & B.). These are all part of the growing “shared economy.” These technologies can significantly disrupt a traditional industry, and they can be scaled globally in just a few years. Disruptive technologies for automobile owning and driving, and for cash and credit cards are now being tested.

All industries are subject to some potential disruption, the construction industry does not appear to have a real disruptor in the near-term (some feel 3-D printing has the long-term potential), but the use of technology is becoming a real “strategic separator” in all industries, including construction. It is being used as a visible, tangible point of differentiation. It allows companies to know more (big data) and do more of what they do efficiently and profitably. It is producing real winners and runner-ups in all industries.

The Consequences

The consequences of these two trends - slowing global growth and accelerating technology use - are twofold. First, there are a record number of mergers and acquisitions being completed, initiated or explored; second there is an international glut of oil supply which is driving a complete restructuring of the upstream oil industry. Both will impact the Houston construction market in 2016 and beyond and deserve a deeper look.

The number of mergers and acquisitions with a value over $25 million has grown 25% a year since 2012, according to a McKinsey report. Driving this staggering fact, not surprisingly, is the investor population’s insatiable demand for increased bottom line and top line growth. For several years in the slowing markets, companies used technology benefits to lower costs and increase profits, but now investors are insisting on topline growth, as well. Mergers and acquisitions in a tortoise-paced market growth environment provide the fastest way, particularly when the acquirer is certain that by applying their comparatively advanced technology to the acquired will make an immediate and accretive difference to earnings.

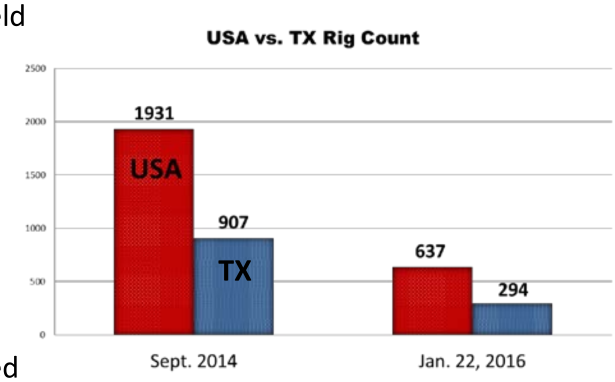


[1]Includes deals with value of more than $25 million only. Figures may not sum, because of rounding.
[2]Data extrapolated to show expected results for entire year based on announced activity (not withdrawn) through Nov 30, 2015.

McKinsey&Company | Source: Dealogic; McKinsey analysis

In the upstream energy business, the drop in global demand that started to create an oversupply by mid-2014 has been exacerbated significantly by decisions in 2014 and 2015 by a petulant, Saudi-Arabia lead Organization of Petroleum Exporting Countries (OPEC). This now very dysfunctional group chose not to cut supply, as they had historically done to recreate a supply/demand balance. As a matter of fact, some, like Saudi, even increased their output! Their strategy was to punish and damage the non-OPEC oil producers, particularly in the US and Russia because they were beginning to impact the strong market share of these countries, whose economies and ruling groups' job security is almost totally dependent on oil.

The result of their decision is now a global oversupply of about 2 Million barrels per day (bbl/d) and an inventory in storage facilities of over 60 days' supply (and Iran has not yet started supplying). Over the past 12 months this has triggered a significant response. US producers and others have cut 68 projects, worldwide, totaling $320 billion. They have cut their other capital budgets by at least 25% as, as well (they can't cut too far as there are very high maintenance costs for existing upstream and storage assets.) They have laid off thousands; estimates reach to about 120,000 globally. The first waves were the oilfield services and wellhead workers as well as the manufacturing workers that support them, but now it has reached the very well paid professionals in Houston whose average annual total compensation was $225,600 according to Dr. Bill Gilmer, a Houston Senior Economist. It has also lead to a sharp decline in the rig counts, and to a wave of consolidations (e.g. Baker Hughes/Halliburton; Schlumberger/ Cameron) and many more are expected, as the credit window has closed



to all but those with the strongest balance sheets. And, regrettably, there have been bankruptcies as well, and the possibility of several more now with oil below $30.

However the Saudi/OPEC strategy has backfired in two ways. First, the savvy Texas oil operators have found ways to significantly lower "lift costs", those non-balance sheet operating costs, through lean manufacturing concepts; through vendor price cuts; through technology that improves yields per well and through cheaper approaches to fracking, such as "slick water", which uses only soap and sand. Most operators now have their costs below $30/bbl.; many in the low $20's. Despite the much lower rig count US overall production rose about 1% in 2015.

The second way their plan has misfired is in the severe consequences to their own members. According to the President of Hess Corporation, US energy companies have lost a combined $100 Billion since the price dives, but the combined OPEC members have lost an estimated $200-$500 Billion! Since their annual budgets are almost totally oil dependent, they are experiencing significant deficits, and they are forced to redeem money from their Sovereign Wealth Funds, aggregately worth near $7 Trillion prior to the slide. Economists now consider OPEC a "fractious cartel."

Saudi has particular internal challenges: an ailing and fading king; an aggressive, change - driving, western-oriented 30 year old Deputy Crown Prince, Mohammed bin Salman, Defense Minister and head of the Economic Council, a 15% budget deficit, a still powerful Sunni Wahhabi Sect Clerics and a restless 29 Million people, about 70% of whom are under 30 years old. Right now they are almost totally a welfare state, which the Deputy Crown Prince is trying to change with the help of his western educated staff and outside advisors like McKinsey. He has experimented by privatizing two airports and is looking to do the same with health care and education. He is cutting subsidies on utilities, and startlingly, he is considering an IPO for a portion of Saudi Aramco, the mysterious national oil company, considered by many to be perhaps the most truly valuable company in the world (they have reserves ten times that of Exxon Mobil, and they produce oil for an estimated $12/bbl.) Women remain oppressed. They can vote and hold office, but they can't drive; the Royal Family is reluctant, to date, to take on the Clerics. This country is a potentially combustible cauldron; as the young people want more western life styles and less oppressive religious rules.

With global demand projected to remain tepid, the outlook for 2016 and well into 2017 is for more of the same, volatile prices, hopefully bottoming soon and no lower than the mid-$20/bbl.; OPEC spigots wide open; non OPEC Production cuts of up to 750,000 bbl./day, 400,000 or so of that from the US. The US is considering taking more off too, perhaps another 300-400,000 bbl./day. The recent ability for US firms to export may help some, as; these domestic producers are no longer captive to the downstream refiners. However, any increase in demand or US production cuts may be offset by the flow from Iran and Libya. The US operators will close the traditional higher-cost stripper wells, and instead use the newer, technology enhanced ones, and use the drilled, uncompleted (DUCs) wells to lower cost and to ramp up supply quickly in a better price environment. Companies with strong balance sheets can acquire these DUCs at cents on the dollar; and complete them for about 45% lower than in full market times. Field based technologies will continue to attract capital. Houston based startup; UpCurve just secured $100 million from a private equity firm.

There will also be a significant restructuring of the industry players. Large amounts of capital were hurled into the upstream space between 2011 and 2014, much of it deployed inefficiently. It is estimated that very few small and mid-size firms are earning their cost of capital. In addition, firms who rely on reserve based lending will see their credit lines cut or eliminated as the value of their reserves plummet; their price hedges roll off and forward pricing is speculative and unfavorable. This will force more merging and acquiring, some of it bank lead. And, the smart, patient, opportunistic private equity firms and family offices are ready to pounce too. It was just announced that HilCorp and the Carlyle Group have a $1.24 billion fund ready to deploy.

Other International Challenges and Risks

There are potentially other international risks that could erupt and impact our markets here. ISIS and their other terrorist friends remains a global scourge. It is now under the leadership of al-Baghadi, a PhD educated Islamic scholar, who has selected the most violent interpretation of the Koran (Quran). They have become the feral hogs of humanity and will require a much stronger, coordinated and unified response. There is continued turbulence and potential explosiveness throughout the Middle East. Eruptions could occur in Saudi Arabia, Iran and Turkey based on the never-ending religious tensions. There are some who feel Russia's entire economy could collapse because of the low oil prices and the expensive wars in Syria and the Ukraine; the ruble deteriorates with each oil drop, and Putin, along with Poroshenko in the Ukraine and Erdogan in Turkey are rated the world's most unpredictable leaders. Collapsing economies mixed with outsized egos and bully blood could be a catalyst for trouble.

The Picture for the US and Texas

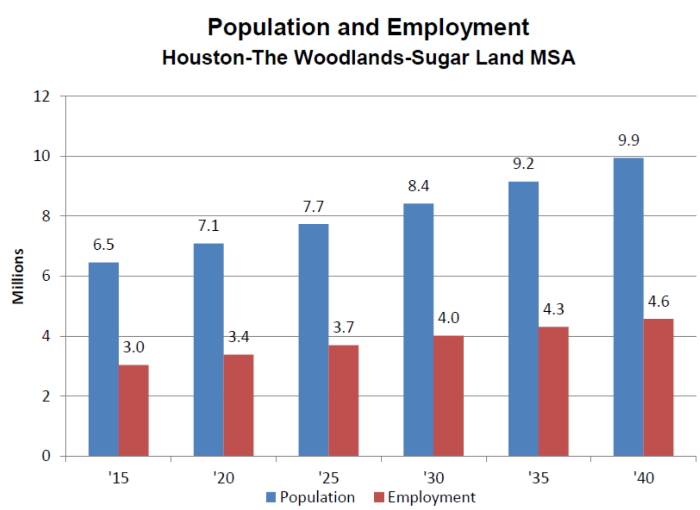
The outlook for the United States consists of steady, low growth. GDP estimates range from 1.5% to 2.5% and job growth has averaged 220,000 jobs a month over the past year, helping to consistently bring down the average unemployment rate from its peak in 2010. The Federal Reserve Bank has finally raised interest rates, and the increasingly confrontational, albeit entertaining, presidential race will see a victor in November.

Texas' overall metrics still point to growth. While 14.2% of the Texas economy is related to energy, it is places like Houston, Odessa and Midland that are most affected by this drop in prices. The other major Texas metros are much less shaken and continue to thrive, all consistently posting better unemployment rates than Houston. While job growth has begun to slow in Texas (361,200 jobs in 2014 vs. 138,400 YTD through November 2015), predictions still have Texas at around a 5% unemployment rate at year end 2016, with a slower 1.6% GDP growth projected. What most economists can agree on is this slowdown is only in the short term. All long-term projections for population and employment growth for all major Texas metros illustrate a steady increase through 2040. Texas remains a great state to do business in, and is increasingly diversifying itself.

Population			
	DFW	Austin	San Antonio
2015	7.1	1.9	2.3
2020	7.7	2.2	2.6
2025	8.5	2.4	2.8
2030	9.2	2.7	3.1
2035	10	2.9	3.3
2040	**10.8**	**3.2**	**3.6**

Employment			
	DFW	Austin	San Antonio
2015	4.3	1.2	1.3
2020	4.8	1.3	1.4
2025	5.2	1.5	1.5
2030	5.7	1.7	1.7
2035	6.3	1.9	1.9
2040	**6.9**	**2.1**	**2.0**

Source: Woods and Poole



Source: The Perryman Group, Summer 2015

The Perryman Group anticipates Houston will add 1.54 Million jobs and 3.4 Million people by 2040.

What has been the Impact on Houston and on our Industry to Date?

What is good for the rest of the nation is not necessarily good for Houston when it comes to low oil. Houston has been hit harder than most by the rapid decline in the energy sector. The frenzied pace experienced since 2010 is slowing (not stopping or receding) to a sustainable, steady growth. Job creation slackened from just over 100,000 in 2014 to an estimated 23,200 in 2015, with 21,900 projected by the GHP for 2016. Population growth too is expected to decelerate, as there are fewer jobs available and improving markets elsewhere. However, Houston is by no means dead. While the question remains as to how long the slowdown will last, economists are not forecasting a recession in 2016. The chart below, outlines Dr. Bill Gilmer, PhD projections for the next 4 years under various recovery scenarios; “damage” indicating the OPEC Strategy had strong impact. Right now he leans toward the checkmark, lower for longer.

Job Growth in Houston (000 Jobs Q4/Q4) Scenarios				
Year	V-Shape	U-Shape	**Check Mark**	Damage
2015	14.5	14.5	**14.5**	14.5
2016	41.1	28.4	**22.7**	20.4
2017	129.7	97.4	**88.4**	53.0
2018	100.2	90.1	**80.8**	66.0
2019	95.1	86.5	**71.0**	56.7

The Specific Market Picture

Houston is poised for another year of construction opportunities, though the markets those opportunities exist within have narrowed from years past. But first, those markets whose prospects will be restricted.

- **Residential** – According to Forbes magazine, the number of Houston permits for single and multifamily projects from 2011 to 2014 was higher than every other US metro during that same time period. It is no surprise then, to see both these markets begin to wane in 2016. Approximately 28,000 new homes were delivered last year, according to Metrostudy, with an estimated 25,500 new homes to be delivered in 2016 and 26,500 homes in 2017. While this is roughly only a 10% decrease, there is pain expected to be felt in the new home market as available lots were prepped for the higher end homes, for which there is no longer a strong market. In addition, the rise in interest rates decreases the affordability of a new home for many Houstonians given the recent increases in the median home prices. However, this overall slowdown could counteract the interest rate increase and result in reduced home prices and concessions by mid-year 2016.

- **Multifamily** – This market held up much better than we expected in 2015, given their risk to overbuild. This was, in part, due to the strong gains in population and employment from the previous years as well as the rising home prices which kept many in apartments. The occupancy rate remains above 90% and an estimated 17,000 new units were delivered in 2015. However, our concern for overbuilding persists. A recent report from Apartment Data Services outlines nearly 21,000 units in lease up and another 29,000 under construction in December2015. When coupled with the negative absorption experienced in October and November 2015 and the significantly reduced employment and population projections, 2016 may be the year that concessions will be seen on a much larger scale.

✶ **Hospitality** - This is another market with strong growth for the past several years- experiencing double digit percentage increases in revenue per available room each year since 2011- and then reversing course in 2015. The combination of a decrease in energy business travel and the flurry of construction activity, which resulted in a large amount of supply coming online, could cause the market to decline further in 2016. PKF Consulting is tracking an additional 8,000 - 10,000 rooms slated to come online by the end of 2017.

There are three markets that continue to be or have returned to a more normal pace:

✶ **General Purpose Office Space** – Decidedly the most affected market, thus far, since Houston's economy began to soften is the office market. Yet it still had very respectable metrics at the end of the year per CBRE.

	2014	2015
Absorption	5.5 msf	4.8 msf (O.O.)
Overall Vacancy	11.6%	14.2%
Rental Rates	$25.79	$28.67
Under Construction	17.6 MSF (64%)	7.4 MSF (52.4%)

This is especially commendable when factor in the 7.3 msf of sublease space, most of which flooded the market in 2015, with more expected to come in early 2016. The increasing number of acquisitions and mergers taking place should only exacerbate the sublease market. Some renovation work will spawn from the M&A frenzy, but total construction activity in this market segment will be markedly slower. CBRE projects roughly 6.7 msf to be delivered in 2016, compared to the estimated 12 msf in 2015. This market also has the potential for a sublease bubble as many lease contracts expire in less than five years.

✶ **Light Industrial** – The light industrial/warehouse market is slowing from its feverish pace but still very strong. According to CBRE, at the end of 2015, there was nearly 9.1 msf delivered, with a vacancy rate of only 4.9% and 8.6 msf under construction. The Daikin campus makes up almost half that construction number. Consequently there will be a significant drop in activity when the Daiken campus is completed, but new project announcements like Cedar Park (1.5 msf in Baytown) will help pick up the slack. And positive drivers remain with the Panama Canal expansion completed in May, a Houston port that experiences an ever-increasing amount of shipments, and low natural gas fueling the petrochemical market. After experiencing an incredibly strong construction cycle since 2013, starts dropped off in the second half of 2015 and this market is expected to return to a slower, normalized pace in 2016.

✶ **Religious** – Reinforced by a recent conversation had with Steve Faught, Director of Construction and Preventative Maintenance for the Archdiocese of Galveston-Houston, parishioners pray in good times and bad, providing tithing as needed to meet the needs of the church. The oil slump has had marginal impact at best. The Diocese anticipates $60 Million in construction this year, and when combined with the other institutions, this market continues to be as steady as their faith.

Those faring much better in 2016:

- **Heavy Industrial** – The dollar amount of projects underway on the east side of Houston is staggering, and this market has yet to hit its peak workforce needs. Roughly half the projects are expected to complete in 2017, but there are projects with completion dates past 2020, in part due to the shortage of qualified workers. The east side will be on fire for at least the next two years before they moderate, albeit only slightly.

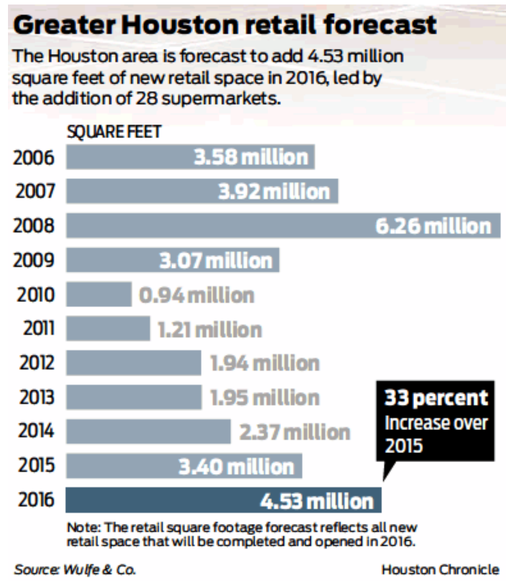
- **K-12** – First comes population; then comes schools. After adding nearly 600,000 people from 2010 – 2014, according to the US Census Bureau, to the greater Houston area, it is no surprise that the public school system is reacting. After Houston voters approved over $5.6 Billion in school bonds in the last two years, districts are putting that money to work - expanding, updating, and upgrading their facilities for the next generation of students. Of the 25 districts that we spoke to, there is $1.79 Billion in work to be had in 2016. Leading the charge is HISD with $836 Million in work, followed by Conroe, Alvin, Cy-Fair and Katy, all with over $100 Million each. With over 50 districts in our area, this market could easily sail past the $2.5 Billion mark. Below are the individual results per district that responded with work.

District	Construction
Alief	91.57M
Alvin	**168.1M**
Angleton	6M
Barbers Hill	4M
Conroe	**177.4M**
Cy-Fair	**150.7M**
Damon	1M
Danbury	1.2M

District	Construction
East Chambers	10M
Houston	**836M**
Humble	64M
Katy	**111.4M**
Klein	67M
New Caney	54.57M
Royal	1.75M
Waller	50M

- **Higher Education** – A healthy recipe of $3.1 Billion in tuition bonds approved in 2015 combined with high demand equals a great year for post-secondary schools. Between UT, A&M, HCC, Lone Star and TSU there is over $1 Billion in work. Add in the University of Houston, Rice, Sam Houston and others, there will be an abundant amount of opportunities for contractors to go back to school.

✶ **Retail** – Another market playing catch up this year is retail. After years of low deliveries, retail is resurgent in 2016, with a record setting 5.9% vacancy rate at the end of the third quarter 2015, according to CBRE. With 2.4 msf under construction and another 2 msf expected to break ground in the near future, this market is beginning to sizzle. Wulfe & Co. forecasts a 33% increase in retail square footage in 2016 as multi-use centers thrive and additional retailers enter the Houston market. CBRE notes that Houston has historically added 37 msf of retail space per decade since the 1980's, and with only 9.6 msf added in the last 5 years, retailers will need to add over 27 msf to catch up to equilibrium.



✶ **Public Work** – There is a significant increase in public work projects expected this year. The City of Houston has a 54% increase in projected spending than a year ago, with another 31% increase in 2017. The Port of Houston, in final preparation of the post Panamax ships, has $315 Million in projects, Harris County will have over $68 Million and Metro will add too.

✶ **Highway/Civil** – While the City of Houston will be slightly down from a year ago, and Harris County will have a respectable $233.3 Million in work this year, the reason this market is projected to do so well is because of the massive amount of work that TxDOT has planned - $1.42 Billion, the largest in 10 years, which is as far back as our records go. The work is divided among all areas of the city, most notably the expansions along 288, 249 and 59, but several smaller projects are being fueled by the completion of the Grand Parkway this quarter, as TxDOT constructs and widens lanes to support the increased traffic in what were once rural areas. An additional $1 Billion - $1.3 Billion will be divvied out at the end of January to the major Texas metros – meaning Houston will have even more funds to spend on needed infrastructure.

✶ **Medical** – We've saved the best for last. Not only because of the medical field's ability to consistently deliver work for our industry, but for their ability to consistently lead their industry globally, revolutionizing the medical field and putting Houston front and center on the international stage, thereby attracting companies to our region and perpetuating our growth. Under the highly focused leadership of Dr. Bobby Robbins, the Texas Medical Center is redirecting and reenergizing its efforts towards innovation; spawning new partnerships, conducting exciting new research, and creating growth along the way. They have selected five initiatives where TMC and their institutions will become the global leaders and standard setters: Genomics, Regenerative Medicine; Clinical Trials; Health Policy and Innovation. Their TMC3 program will create 1 million square feet of shared research space plus support facilities for partners like Johnson and Johnson; AT&T, Apple and Venture and Private Equity firms. Their TMCx plan, already in motion, gives space to startups with promising ideas.

Then there are the expansions and reconfigurations of their existing members. This year the $1.1 billion CHI/Baylor Hospital will get underway, as will some of the CHI system's major outpatient facility expansion. The other large systems (Methodist; Memorial-Herrmann) will also have projects. Houston's growing and ageing population; newly insured and world class reputation will keep driving continuous activity in this segment. Also as payer models change from "fee for service" to guaranteed max (GMP) approach, the quality of care, effectively and efficiently delivered by these majors, will make them even bigger winners.

The University of Texas is expanding their footprint too. They have acquired in two separate transactions, about 500 acres south of TMC , where they will create an "Intellectual Hub ", according to Admiral Bill McRaven, newly appointed Chancellor of the UT system. All dimensions of this exciting new development have not been fully digested. However he does anticipate an Engineering Institute, and a mission, like the "Manhattan Project" approach, to eradicate Alzheimer's. This is the man, a decorated, four star officer and war hero, who led the highly successful mission that eradicated Osama bin Laden. Who will bet against him!?

Strategic Challenges Remain

The market continues to provide strategic challenges that need to be acknowledged, then understood and then embraced, navigated or confronted. Here are the ones that will affect most firms:

The Skilled Craft Worker Shortage

Source: GHP

First, the skilled craft worker shortage will remain; perhaps even intensify in impact as the Industrial market moves into peak staffing levels from 2016 to 2018. These industrial jobs magnetize skilled craft workers with higher hourly wages, opportunities for overtime, attractive per diems and longer schedules. Fortunately real progress has been made both by the Construction Career Collaborative (C-3) and the UpSkill Houston initiatives so that the overall industry and the community are working toward a solution. Wages for legally employed construction workers have increased; safety training is more widespread and craft training options have been identified and strengthened. The community college network has become a major training partner and the community organizations major recruiting partners. But legal access to an immigrant workforce, always historically necessary, remains elusive. Immigration reform in Congress has been blocked, and implementation of the President's Executive Order relating to the parents of US born children has stalled by a court challenge. This topic is a significant differentiating point in the Presidential race; once that shows the major divide. Let's hope we elect a leader who can solve this challenge.

Evolving Delivery Systems and Construction Methods

The second issue is that both delivery systems and construction means and methods continue to be expanded and refined. Market leading companies are capable of delivering projects under many of the traditional systems (Hard Bid; Competitive Sealed Proposal; Construction Manager at Risk; Design/Build) to some of the newer ones (Integrated Project Delivery; P-3-Public Private Partnerships). Lean construction methods are often overlaid on these; new acronyms appear, for example, ILPD (Integrated Lean Project Delivery). The expectation for lean methods appears to be a growing owner expectation as they are adapting lean principles in their own work.

Prefabrication, and its positive impacts on schedules and costs, continues to expand; some owners are now even specifying multi-trade prefabrication and paying for space to do it. It is the kind of improvement and innovation that comes from concerns over the lack of skilled craft workers, and there are other experiments to improve labor efficiency as well as cost and schedules. Modularization, where component modules are produced in a factory, shipped to a jobsite and then finished there, is growing too. Problems with warranties, shipping, and compliance with jobsite locale jurisdictional inspection requirements remain challenges with this approach. As most have been reading, the Chinese with their crowded, polluted mega-cities are even looking at "offsite build and jobsite assemble" approaches.

The construction world is watching these developments closely - several variations are in beta test in the US. Then there is 3-D printing which economist and Nobel Laureate, Michael Spence of New York University says is the biggest potential disruptor of the construction process. It is growing in application, from originally making models to test designs, to making some structural components, to making small building structures like storage sheds. Smart contractors are watching these developments.

Rapidly Expanding Technology

The third strategic issue is the accelerated march of technology. It is becoming a "strategic separator" for construction firms, as it has been in other industries, and increasingly it is a standard that owners and their representatives are coming to expect. A demonstrated, consistent ability to complete a project using proven, user-friendly technology at every phase has to be part of a contractor's value proposition now to serve certain markets and customers. People want the many benefits of "big data" which is what a construction project produces, in organized efficient formats, delivered by mobile application if possible. They also want it to be understood and manipulated, if necessary, by project level staff. Sophisticated contractors want the same advantages of big data for their own internal use, particularly as it relates to productivity and profitability of functions and people. They want to base their incentive compensation and rewards on facts, not feelings.

Certainly understanding and using BIM is becoming as common as estimating, project management, accounting and contract management applications. Now there are advanced and enhanced BIM applications; particularly those that allow the management of "big data." One, Assemble, will become a standard on larger projects, in our judgment; it is used by many of the largest contractors and construction managers now. It is a big data platform software that takes every project participant's model, converts them into this master database, easily useable by contractors and owner reps to see value engineering options, schedule issues, conflict problems and more. Appropriate security of this data is also a feature. It then becomes the "record" database for the building manager. Another promising technology, still in final development is Project Atlas, a software application that puts all drawings for a project into a format that allows a comprehensive look at the entire project in the broadest or most minute detail, in a single graphic interface. It is not just digital paper. It has a Zoom feature like "Google Maps" that enables a variety of views with only one interface. This program eliminates match lines and flipping paper. It is much more efficient and secure.

On the company side is business intelligence software application called Profit Picture that interacts with your existing system to provide, in a visual, easily digestible format, real time information that is actionable. For example in chart and graph form, it can show productivity per craft worker per hour. It is structured so that the only information a person receives is applicable to his or her level of authority. It has a mobile feature. This program brings the advantage of big data to small firms, and provides a foundation for a truly performance-based culture, the type that rewards and retains top talent.

Drones too are growing in usage. They allow contractors and engineers to gather richer data in an easier and safer way. They are being use for progress photos, security checks and site analysis and even for inspections of paving and pipe by some states. Regulations are now pending for their use because they are becoming so popular.

The War for Talent

High quality talent has become compellingly evident as the major differentiator between the market-leading companies and their competitors. Consequently, there is an ongoing "war for talent" with companies working with focused intensity to attract and retain the right people for their culture. A value-based culture, clearly defined and consistently demonstrated, especially by leaders and mentors, is the critical factor in galvanizing the best people for the organization. Culture simply defined as "how we do things around here", especially in how we treat people. To the employee it becomes, "this is what I can count on; what I can believe and trust about this company." Strong cultures drive everything else: the work environment, the performance expectations, the compensation system, and the celebrations. Winning companies build their talented teams into culture carriers and quickly eliminate hires that turn into culture killers. Strong cultures produce people that are fully engaged and act like owners. Much is written about these words and phrases today; they seem to be the secret sauce for some of the tech stars, like Google and Apple. But forward thinking construction firms are paying attention, too. A few are doing “engagement surveys”, which they report gives them rich, actionable data.

Companies are working hard in their recruiting and hiring to eliminate any barriers to attracting talent, especially biases about gender, nationality, and geography. The best companies want the best talent. Period. They are relying more on giving a candidate a sample of the actual work as an employment test; placing value on results over resume. And they are certainly working to attract, retain and optimize the significant talents of the millennial generation; they need these “digital natives” to insure their technology remains competitive. They are adapting to the millennials need for continuous feedback, learning, coaching and mentoring; this promising group are not content with just an annual performance review and an occasional course or seminar. They also want to be judged, wherever possible, by performance not presence. They want deadlines and deliverables and freedom to participate in helping raise their children. Smart companies are adapting.

Thing to Consider

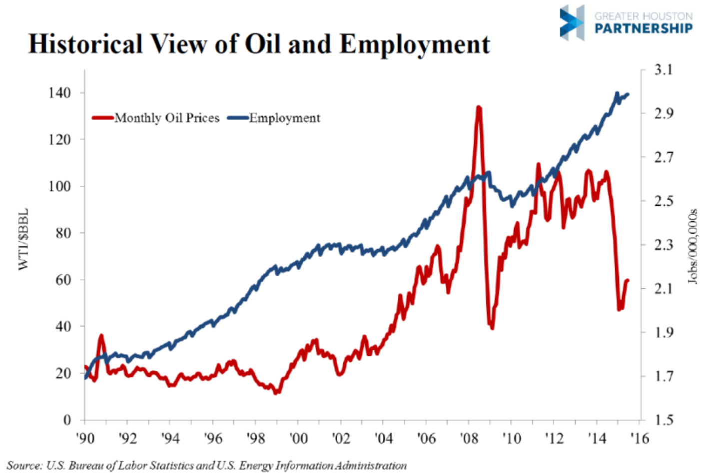
The volatility in oil prices and the steady stream of announcements of layoffs by energy companies has everyone on edge. The two charts below should offer some reassurance:

The first chart, prepared by Houston’s most senior and respected economist, Bill Gilmer, PhD, now of the Center for Regional Forecasting at the University of Houston, compares past oil industry downturns to the present, and the conditions that existed then and now. The second chart, prepared by Patrick Jankowski, Senior Vice President of Research for the GHP, shows that in the period of 1990 through 1999, oil stayed in a bandwidth in the $20/bbl., while Houston created over 500,000 jobs. There is no need for reaching despairing conclusions.

How Houston Fared During Five Episodes of Drilling Collapse

Event	When	Rig Count Decline*	US Recession?	Downstream Construction	Houston Recession?
1980's	1982-87	82.4%	yes	negative	yes
Asian Financial Crisis	1997-98	46.0%	no	negative	no
2001 Recession/Enron	2001-03	35.4%	yes	positive	yes
Great Recession	2008-09	50.9%	yes	negative	yes
Current Shale Bust	2015-?	55.3%	no	very positive	probably not

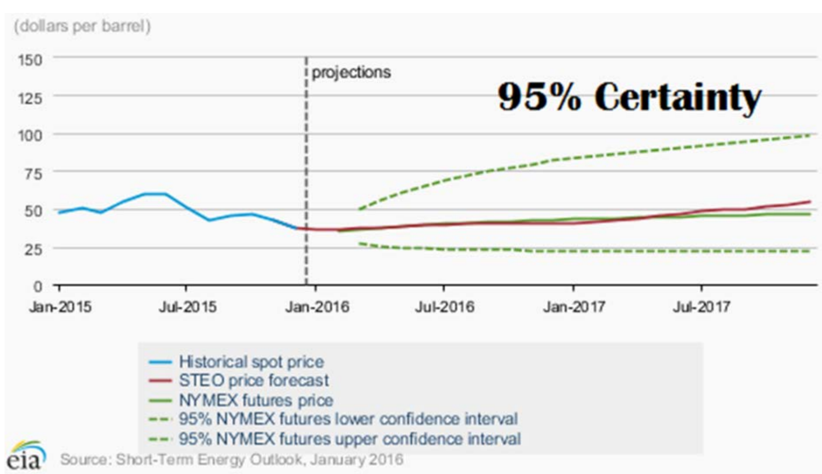
* Decline is through the third quarter of 2015. Based on weekly or monthly data, the fall in the rig count exceeds 60 percent.



This is especially true when you look over the next 25 years, to 2040. Energy demand is projected to increase by 35% brought on by global population growth and the use of energy consuming devices (e.g cars by the emerging markets.) This dovetails and compliments the population and employment growth charts, earlier in this report which shows continuous growth through 2040 for Houston and other Texas cities.

Conclusions

There are lots of moving parts this year, with many unpredictable variables, primarily the price of oil. The chart below shows the EIA's January confidence results, showing a 95% certainty that oil will average somewhere between $25 and $100/bbl. It is clear no one knows.



Consequently, the prudent path appears to be "stay lean and flexible" in the short haul, but focused on the longer range. Smart companies may find exceptional talent available in the next year or two and will be able to make strategic, culturally compatible hires.

It is the type of market that will take more strategy reviews. Are we serving the right markets, targeting the right customers, offering a relevant, competitive, differential value proposition, maintaining our appropriate share? Are there any emerging markets, with appropriate margin, where we have the required competencies? Are there potentially attractive acquisition or merger options? Distressed markets provide opportunities for strong companies and strong cultures.

It is our estimate, in light of what we see and know right now that the commercial market will drop between 5% and 15%; multifamily perhaps a bit more. Heavy industrial will remain strong and the highway market will be stronger than 2015. It is the type of market that will require leaders to drive their organizations to both manage - to optimize everything they have today - and lead - to create a vision of the future, acquire the resources and make the necessary changes to make it happen.

Kiley Advisors is available to present this forecast to organizations, both private and public. Please contact our office for more detail.