



Arena Place, Grand Rapids, MI | Four level cast-in-place post-tensioned concrete parking structure with grade level commercial space and constructed beneath multistory residential and office.

Parking Structure Cost Outlook for 2017

By Gary Cudney, P.E., President/CEO

National Median Parking Structure Construction Cost 2017
\$19,700 per space
\$59.06 per square foot

Carl Walker is pleased to provide its annual statistical analysis of parking structure construction costs and new parking structure market forecast. At Carl Walker, we specialize in parking structure design, structural engineering, parking studies, parking operations consulting, and restoration of parking structures, plazas, facades, and other buildings. We maintain a database of completed parking structure projects and have developed a methodology to analyze the historical cost information to assist our clients and the industry.

Our construction cost database contains hundreds of completed parking structure projects of varying size, scope, and geographic location. For this forecast, we only omit the cost of parking structures that are completely below grade, since the cost of such structures is much higher. The cost data is assigned factors based on the time of bidding and location of the parking structure. The time factor is based on the Building Cost Index (BCI), published by *Engineering News-Record* (ENR). The location factor is taken from the yearly edition of the *RS Means Building Construction Cost Data*. Applying these two factors to actual

construction cost data adjusts the cost to a current national basis and from that we determine the national median. The national median can then be re-adjusted to reflect a median construction cost in almost every city in America.

As of March 2017, our statistical data indicates that the **median** construction cost for a new parking structure is \$19,700 per space and \$59.06 per square foot, increasing 3.5% from March 2016, when the median cost was \$19,037 per space based on our historical database. This relatively minor increase is reflective of the fact that while construction markets are growing, material price increases were very low due to foreign competition, low fuel prices, and labor rates were stable even as the market ramped up. The table on the following page lists the 2017 **median** parking structure construction cost in various U.S. cities.

It should be noted that the construction cost data does not include costs for items such as land acquisition, architectural and engineering fees, environmental evaluations, materials testing, special inspections, geotechnical borings and recommendations, financing, owner administrative and legal, or other project soft costs. Soft costs are typically about 15% to 20% of construction costs, but can be higher for owners who allocate their internal costs directly to the project.

Median Parking Structure Construction Costs 2017

| City | Index | Cost/Space | Cost/SF |
|-------------------------|------------|-----------------|----------------|
| Atlanta | 88.5 | \$17,430 | \$52.27 |
| Baltimore | 94.0 | \$18,514 | \$55.51 |
| Boston | 114.7 | \$22,591 | \$67.74 |
| Charlotte | 85.8 | \$16,899 | \$50.67 |
| Chicago | 120.0 | \$23,634 | \$70.87 |
| Cleveland | 96.9 | \$19,085 | \$57.23 |
| Denver | 89.8 | \$17,686 | \$53.03 |
| Dallas | 86.2 | \$16,977 | \$50.91 |
| Detroit | 100.9 | \$19,873 | \$59.59 |
| Houston | 85.2 | \$16,780 | \$50.32 |
| Indianapolis | 91.6 | \$18,041 | \$54.10 |
| Kansas City, MO | 102.5 | \$20,188 | \$60.53 |
| Los Angeles | 113.4 | \$22,334 | \$66.97 |
| Miami | 83.8 | \$16,505 | \$49.49 |
| Minneapolis | 105.7 | \$20,818 | \$62.42 |
| Nashville | 87.4 | \$17,214 | \$51.62 |
| New York | 134.6 | \$26,510 | \$79.49 |
| Philadelphia | 115.0 | \$22,650 | \$67.92 |
| Phoenix | 87.3 | \$17,194 | \$51.56 |
| Pittsburgh | 102.3 | \$20,148 | \$60.42 |
| Portland, OR | 99.5 | \$19,597 | \$58.76 |
| Richmond | 87.3 | \$17,194 | \$51.56 |
| St. Louis | 101.7 | \$20,030 | \$60.06 |
| San Diego | 109.1 | \$21,488 | \$64.43 |
| San Francisco | 128.6 | \$25,328 | \$75.95 |
| Seattle | 104.9 | \$20,660 | \$61.95 |
| Washington D.C. | 94.0 | \$18,514 | \$55.51 |
| National Average | 100 | \$19,700 | \$59.06 |

MEDIAN CONSTRUCTION COST

I am often asked what features are included within the "median construction cost". A median cost parking structure typically includes such features as:

- 8' 6" to 8' 9" wide parking spaces
- Precast concrete superstructure
- Attractive precast concrete façade, but with basic reveal pattern
- Glass backed elevators and unenclosed stairs clad with glass curtain wall to the exterior
- Basic wayfinding and signage
- Shallow spread footing foundations
- All above grade construction
- Open parking structure with natural ventilation, without mechanical ventilation or fire sprinklers
- Little or no grade level commercial space
- Basic parking access and revenue control system
- Energy efficient fluorescent lighting



City of Orland Park, IL Main Street Triangle
Five-level, precast concrete mixed-use parking structure with grade-level commercial and built over a street.

The construction cost of the parking structure will typically be higher than the median if it includes such enhanced features as:

- 9' 0" wide parking spaces for better user comfort
- Cast-in-place post-tensioned concrete superstructure for lower maintenance
- Attractive façade with precast, brick, metal panels, and other materials
- ParkSmart Certification following the Green Business Certification, Inc (GBCI) program (formerly Green Garage Certification by the Green Parking Council)
- Energy efficient LED lighting with occupancy and photocell computer controls
- Custom wayfinding and signage system
- Storm water management including on-site retention/detention
- Deep foundations, such as caissons or pilings
- Below grade construction
- Enclosed stair towers due to local code requirements
- Enclosed parking structure without natural ventilation where mechanical ventilation and fire sprinklers are required
- Grade level commercial space
- Mixed use development where the parking is integrated with office, retail, residential, or other uses
- State-of-the-art parking access and revenue control system
 - License plate recognition
 - Parking guidance system
 - Count system with variable message LED signs
 - Pay-on-foot stations
- Wi-Fi and cellular services

PARKING INDUSTRY CONSTRUCTION ECONOMIC FORECAST

The construction industry is quite busy and "there is a growing belief among industry execs that the market will continue to expand."¹ Likewise, construction of mixed use and stand-alone parking structures should see continued growth in the near term as construction spending in the institutional sector (i.e. city governments, higher education, and healthcare) is predicted to grow almost 6% during 2017 and 2018 and growth in the commercial, office, and retail sectors are predicted to be even higher during 2017 with some slowing in 2018.

Over the past couple of years, warnings have been coming from the construction industry that projected economic growth would lead to escalation of construction costs and longer construction schedules due to labor shortages in construction trades and professional positions and as construction companies increase margins.



University of North Carolina-Charlotte
Craige Parking Structure Expansion and Restoration



The Engineering News-Record (ENR) Building Cost Index increased 3.3% from March 2016 to March 2017 and Turner Construction's Turner Building Cost Index rose 5.05% over the same period. The Consumer Price Index for All Urban Consumers (CPI-U) rose 2.4 percent for the 12 months ending March 2017, indicating construction inflation reported by both the ENR and Turner indexes well exceeded consumer inflation over the same period. Industry experts recently reported the following on construction activity:

- The American Institute of Architects (AIA) chief economist Kermit Baker, PhD stated that "The prospects for the construction sector for this year (2017) and next (2018) remain quite positive...and the expectations are that construction spending will outperform the broader economy this year and next."² While there has been fluctuation and regional differences in the AIA Architectural Billings Index (ABI), AIA further reports that the "The average ABI score in 2016 was 51.3", suggesting "moderate growth in 2017".³
- The AIA also compiles a Consensus Construction Forecast based on predictions of seven leading U.S. non-residential construction forecasters in the U.S. The Consensus Construction Forecast indicates the non-residential building construction industry is expecting continued growth the next two years. After an estimated 8% growth in nonresidential construction during 2016, the consensus panel projects about 6% growth for 2017 and 5% for 2018, with increases in activity projected for the office sector of 10.6% (2017) and 4.6% (2018), healthcare sector of 4.9% (2017 & 2018), and education sector of 6.3% (2017) and 6.7% (2018).²
- Turner Construction's Turner Building Cost Index which tracks construction cost escalation rose 4.7% during 2016. Their 2016 Fourth Quarter Forecast states that "The shortage of skilled labor continues to be a key factor towards cost impacts across the construction industry. As we move into 2017, this focus on skilled labor is expected to intensify."⁴ Additionally, the Turner 2017 First Quarter Forecast indicates a 1.29% increase in costs for the quarter and that "the availability of skilled labor continues to influence the decision making of subcontractors, who are making a selective approach to pursuits...and a continued high level of construction activity has potential to extend lead times (for materials and project delivery) in the future."⁵
- The Engineering News-Record (ENR) recently reported their first quarter 2017 Construction Industry Confidence Index

(CICI) increased to 76 points on a scale of 100 compared to 61 at this time last year. "The sharp increase in the CICI the past two quarters shows that, of the 263 executives of large construction and design firms responding to the survey, most believe market growth will continue at least through the middle of 2018".¹

SUMMARY

The sustained growth in architectural firm backlogs reported by the Architectural Billings Index (ABI) is a positive indicator for near term growth in the construction of parking structures. In absence of any major political or economic event, construction activity is forecasted to grow about 5% to 6% the next two years, including the institutional and commercial sectors that traditionally build parking structures. With the improved construction activity, project costs are expected to escalate to a greater level than the projected increase in material and labor costs would indicate. Further, shortages of skilled construction workers could restrain market growth and raise construction inflation greater than consumer inflation over the next two years as well as lengthen project schedules.

The parking professionals at Carl Walker will be happy to assist with budgeting of your next parking structure. If you have any questions or would like specific cost information for your area, contact Gary Cudney at gcudney@carlwalker.com or 800-FYI-PARK (800-394-7275).

REFERENCES

1. "Executives See Gains From Trump Administration Agenda," by Gary J. Tulacz, Engineering News Record, March 20/27, 2017.
2. "Even with uncertainties looming, healthy gains projected for 2017 building activity," by Kermit Baker, PhD, The American Institute of Architects AIArchitect, January 25, 2017.
3. The American Institute of Architects (2016, December). "ABI December 2016: Architecture firms report strong finish to the year." Retrieved April 2016 from AIA website: <https://www.aia.org/pages/26736-abi-december-2016-architecture-firms-report>.
4. Turner Construction Company. "Turner Building Cost Index – 2016 Fourth Quarter Forecast." Retrieved April 2016 from Turner Construction Company website: <http://www.turnerconstruction.com/news/item/7619/Turners-Fourth-Quarter-Building-Cost-Index-Reflects-Increasing-Construction-Activity>.
5. Rivetti, Attilio. "Turner's First Quarter Building Cost Index Reflects Strong Market Conditions." Retrieved April 2016 from Turner Construction Company website: <http://www.turnerconstruction.com/cost-index>.