



*Achieve  
Ambitions*

Americas | 2018

*JLL Research Report*

## The State of Construction Technology

*The top startups that are set to disrupt the  
construction industry*



*What's  
inside?*

- 
1. The state of construction technology
  2. What are these startups aiming to do?
  3. Top companies and investors

# The state of *construction technology*

## \$1.05 billion

That's how much venture capitalists invested in global construction technology (ConTech) startups **in the first half of 2018**, a record high. The investment volume of 2018 is already up nearly 30 percent over the 2017 total—and there's still another six months left in the year. This traction goes to prove ConTech's budding allure to users and investors alike, with investment growth actually outpacing overall tech startup investment growth in the United States. And the hype is grounded, as the arena for successful disruption exists—per a recent global McKinsey study, construction is one of the least digitized sectors in the world, with only agriculture and hunting falling beneath it. In today's world, software, technology and computing power are not universally adopted in construction, but these startups are working to change that.

It's no mere accident that this uptick in ConTech investing coincides with an industry plagued by cost fluctuations, labor shortage issues and overall lack of productivity improvements—creating what many venture capitalists view as a prime opportunity for disruption.

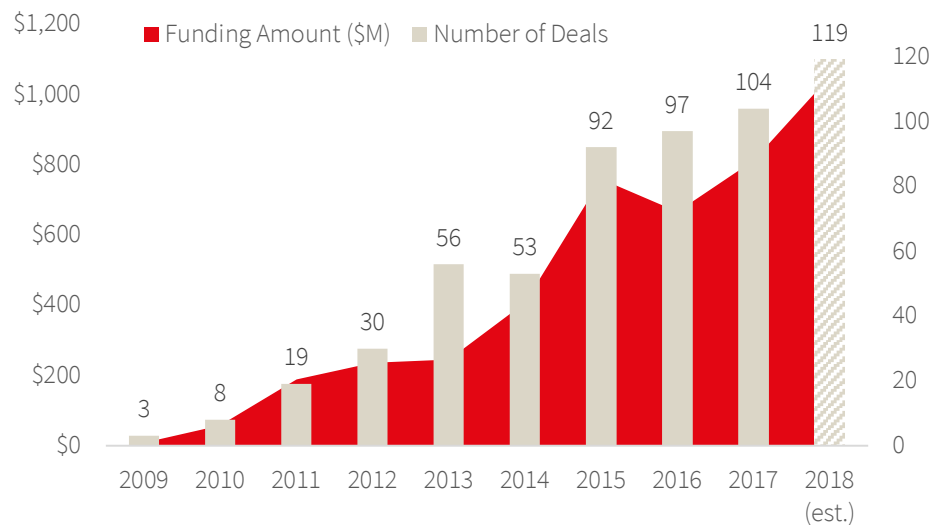
## \$4.34B

Total funding in ConTech since 2009

## 478

Funding deals in ConTech since 2009

**Construction startup and venture capital activity**



Source: CB Insights, JLL Research

Let's gain some

# perspective...

1.

Over the last 25 years, based on Bureau of Labor Statistics data, nearly every industry doubled their productivity rate, whereas construction has not only flat-lined, but declined.

**Bottom line:**  
Labor-intensive processes

2.

Materials costs are growing at an increasing rate—costs grew by 5.6 percent over the last 12 months, with another 5–6 percent in increases expected over the next year.

**Bottom line:**  
Less product for your buck

3.

Access to skilled labor continues to be an issue. The number of construction workers is down 12.9 percent from the 2007 peak.

**Bottom line:**  
Growing project schedules

4.

Spending in construction is up 23.3 percent over the 2007 peak, hitting a projected \$1.3 trillion in 2018, compounding the woes of supply and demand for labor.

**Bottom line:**  
Increased rivalry for resources

5.

Construction wages are continuing to rise, and quickly. Up 4.5 percent in the last year (compared to +2.2 percent across all industries), and 31.2 percent over January 2007.

**Bottom line:**  
Labor wages are at a premium

The huge bump in ConTech investment and venture capital is hopeful proof of an impending surge of technology and hardware marvels promising to optimize the industry. Many in Silicon Valley are betting that ConTech can solve the woes currently plaguing the trade through a handful of creative approaches.



# How do startups *fit in?*

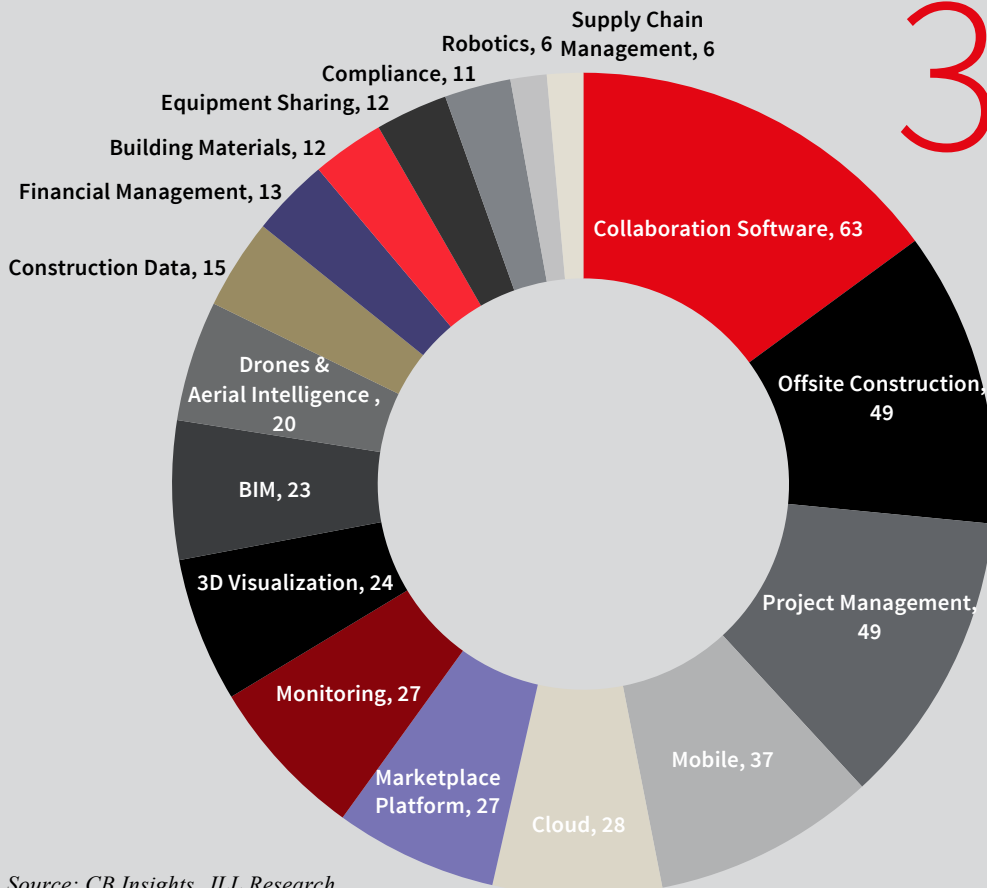
## The problem:

Construction schedules are expanding and labor and materials costs are rising sharply.

## The solution:

ConTech startups promise to deliver projects faster, with fewer resources and cheaper than ever before.

**Where Construction Technology startups are innovating**  
(by number of startups in category)



**3** Number of Unicorns in Construction Technology to date  
(startups valued over \$1B)

- | Katerra
- | Procore
- | Uptake

Source: CB Insights, JLL Research

# Construction technology startups’ primary focuses:

## Collaboration software

In today’s construction environment, dozens of professionals can be working on a given construction project simultaneously—sharing documents, providing edits and making on-the-ground decisions. Architects, engineers, project managers, general contractors, cost estimators, clients and many others all work from a common schematic. To combat version control and speed up the paper passing process, a sizeable chunk of construction tech startups are focused on optimizing that workflow. Front-runners are utilizing cloud capabilities, mobile platforms and dedicated design software that allow for plans and markups to be shared instantaneously with all project stakeholders.

## Offsite construction

As skilled construction labor becomes harder to find, materials continue to rise in price, and general competition for construction inputs heats up—offsite construction startups are championing a different approach to how buildings are built. Offsite startups are focused on fabricating building components in a manufacturing setting, then shipping the pieces to the final building location for rapid assembly. Offsite construction can be leveraged for nearly every property type, and it utilizes intense supply chain optimization and just-in-time delivery to quickly and economically construct buildings.

## Big data & artificial intelligence

Today, by way of the internet of things (IoT), beacon technology and smart software, nearly every aspect of a construction site and project can collect data. Startups that leverage big data and artificial intelligence (AI) are aiming to utilize these massive data sets as a tool to make more informed decisions on a construction site. Successful startups cover a range of solutions; from optimizing materials deliveries and worker placement on site, to preemptively predicting equipment maintenance and automating simple business processes. As data tracking becomes more prevalent in the construction industry, these startups will be wading through massive pools of numbers and offering insights into better workflows.

### Leaders:

- Procore Technologies**  
\$180.2M in funding
- PlanGrid**  
\$66.0M
- Flux Factory**  
\$39.3M

### Leaders:

- Katerra**  
\$1.1B in funding
- Blu Homes**  
\$179.5M
- Project Frog**  
\$93.0M

### Leaders:

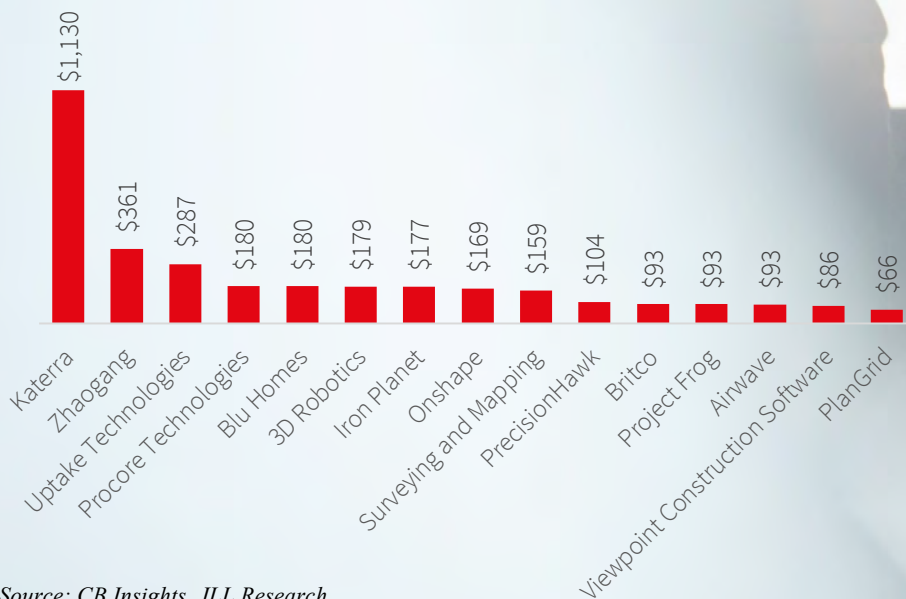
- Uptake Technologies**  
\$287M in funding
- Flux Factory**  
\$39.1M
- SmartEquip**  
\$31.6M



# Top startups & investors

The top startups in 2017 and 2018 by funding are focused on modernizing and streamlining the lagging construction industry. Offsite construction, cloud-based software and new tech-focused hardware are capturing the largest investor dollars and customer bases. Artificial intelligence and big data solutions are a close second but are positioned to make even larger impacts.

## Top startups by total funding (\$M)



Source: CB Insights, JLL Research

## Top 5 startups (detail):

Company	Total funding	Latest funding	Latest valuation	Product
Katerra	\$1.1B	1/2018	\$3.0B	Offsite construction (residential and commercial)
Zhaogang	\$361M	7/2017	\$1.0B	Materials trading platform
Uptake	\$287M	11/2017	\$2.3B	Big data analysis and AI
Procure	\$180M	12/2016	\$1.0B	Cloud-based management software
Blu Homes	\$180M	1/2015	\$527M	Offsite construction (residential)



## What they do:



### Katerra

**Founded 2015—Menlo Park, CA**

The star child of 2017 Construction Technology VC, Katerra is an integrated technology, construction and development company focused on building assets quicker and cheaper. Utilizing BIM technologies, a global supply chain, prefab construction and manufacturing techniques, and just-in-time delivery of ready-to-install components, Katerra is redefining how modern construction is done.



### Zhaogang

**Founded 2012 —Shanghai, China**

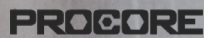
Zhaogang is a business-to-business e-commerce platform specializing in steel trading. The company, currently focused on Chinese buyers and suppliers, provides an online exchange, as well as information and quotes for a wide range of steel products.



### Uptake

**Founded 2014 —Chicago, IL**

Uptake creates predictive analytics software that collects and interprets sensor data for mining, rail, energy, aviation, retail and construction industries. The company integrates industry expertise, data science and workflow connectivity to build solutions based on massive data sets, identify problems before they happen, and drive safety, efficiency and productivity.



### Procore

**Founded 2002 —Santa Barbara, CA**

Procore Technologies creates and sells a suite of cloud-based construction management software, focusing on optimized workflow and information sharing. The Procore product family covers all types of construction projects and roles within the construction life cycle.



### Blu Homes

**Founded 2008—Vallejo, CA**

Blu Homes is a prefabrication-focused residential builder. The company has a handful of customizable predesigned homes that are manufactured offsite, shipped to the final location and assembled in three months. The process is quicker, cheaper and more eco-friendly than traditional custom construction.

Top investors in construction technology are

*wide ranging*

The pool of investors and VCs in the construction technology field remains diverse. Both general tech and real estate specific investors are buying into the sector, but notorious startup accelerator Y Combinator has been the most active to date. While construction venture capital activity has quickly picked up in recent quarters, corporate investors remain notably absent from the active pool of investors. Surprisingly, Google Ventures and Caterpillar are the only corporate entities to make multiple bets in Construction Technology since 2012.

**Most active Construction Technology investors  
(by number of Construction Technology startups in portfolio)**



Source: CB Insights, JLL Research



### Top 5 investors (detail):

Investor	Construction Technology startups in portfolio
<b>Y Combinator</b>	PlanGrid, Airwave, BuildZoom, BulldozAIR, EquipmentShare and 8 more
<b>500 Accelerator</b>	SupplyHog, Builk, IMERSO, ViaVolta, Betterview and 3 more
<b>Brick &amp; Mortar Ventures</b>	BuildingConnected, HoloBuilder, Zlien, Rhumbix, ManufactOn, Serious Labs
<b>Borealis Ventures</b>	Newforma, Vico Software, FieldLens, Flux Factory, Smartvid.io, Blokable
<b>Caterpillar</b>	IronPlanet, Yard Club, Uptake Technology, Airwave, BusyBusy



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