

A tall, modern building with a white, stepped top section featuring the 'mace Factory 2' logo. The building is surrounded by other urban structures and a clear blue sky with scattered clouds. A teal banner is overlaid on the left side of the image.

# SHAPING THE INDUSTRY THROUGH INNOVATION

London Build 2019  
George Holder



2014



2019



Heathrow

JULY 2016 | ISSUE 224

**THINK SAFETY, ACT SAFELY**  
Stobart Rail  
SAFETY CAMPAIGN INSIDE

**RAILSPORT GAMES 2016**  
20 MATCH REPORT

**THE LIFE OF A CROSSRAIL 34 APPRENTICE**

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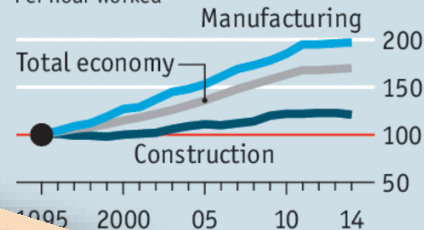


# It's not been an easy few years...

## Interserve goes into administration after rescue deal rejected

### Global productivity

Real gross value added, 1995=100  
Per hour worked



Ministers seek to reassure staff  
as Carillion collapse sparks anger

News > Business > Business News

## Kier shares plunge 40% as construction firm issues profit warning

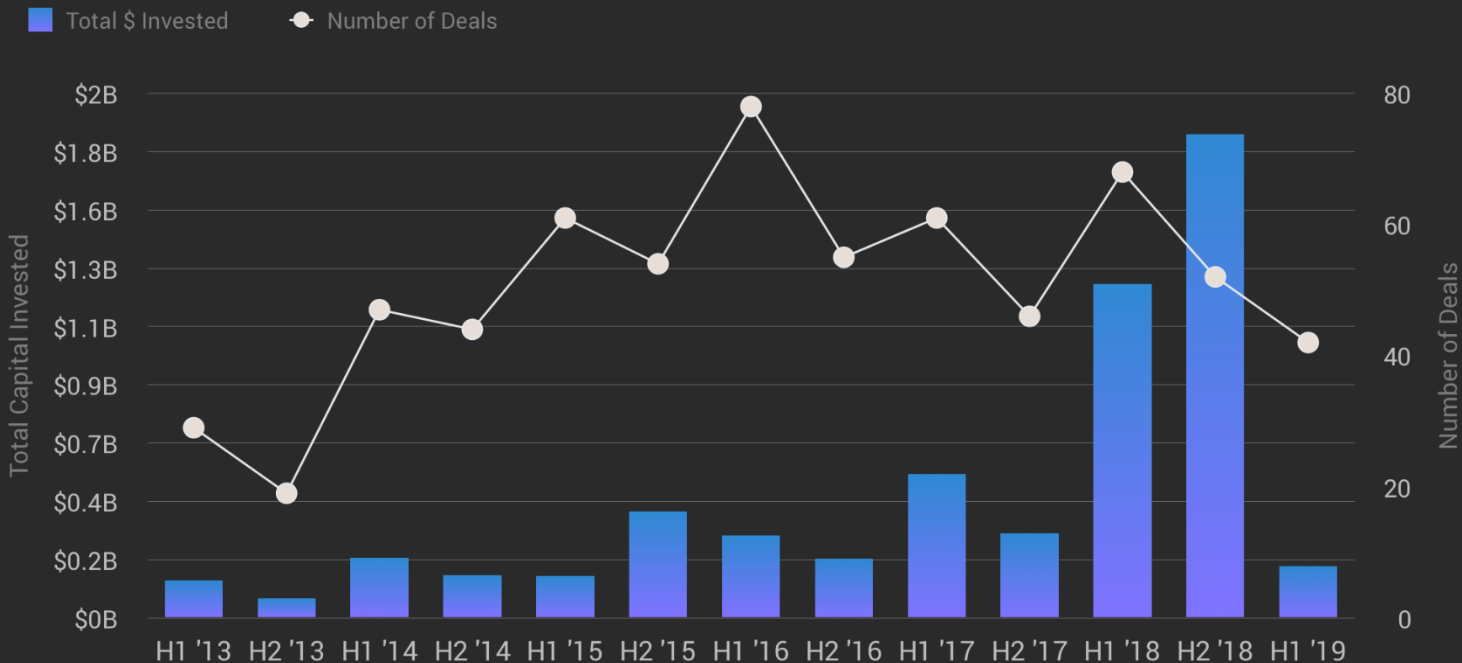
## Galliford Try shares crumble on huge profit warning

08:55 16 Apr 2019

Share ▾

# Venture Capital Investment In U.S. Construction & Building Technology Startups, Through H1 2019

Based on a de-duplicated set of non-PE rounds raised by companies in Crunchbase's "Construction," "Building Material," and "Smart Building" categories. Dollar volume is based on deals of known size. Deal volume counts all deals. Current through July 9, 2019.





# Compared to 'our' investments?

Balfour Beatty  
Living Places



ARUP



ATKINS  
Member of the SNC-Lavalin Group



Bentley  
Advancing Infrastructure



HMRC R&D  
Qualifying  
Spend

c£250m



Smith &  
Williamson



**DOING**  
**THINGS BETTER**

**DOING**  
**BETTER THINGS**



**THE INDUSTRY  
WE HAVE**

**THE INDUSTRY  
WE NEED**





**“ THE PACE OF CHANGE HAS  
NEVER BEEN SO FAST, AND WILL  
NEVER BE THIS SLOW AGAIN...”**





**10bn**  
world population  
in **2050**







**70%**  
world population  
**in cities**





We have been building vastly fewer than the...

**250,000**

...homes a year needed to keep pace with the growing population...



The government has set targets to build...



The construction industry would need to increase its productivity by...



if it is to build the homes that cities need







CRISIS



The background of the image is a dense arrangement of Japanese lanterns, likely from a festival. Each lantern is white with black calligraphic text. A diagonal line, colored with a gradient from purple to yellow, divides the image from the top-left to the bottom-right. The word 'THREAT' is written in a bold, cyan, sans-serif font on the left side, and 'OPPORTUNITY' is written in the same style on the right side.

**THREAT**

**OPPORTUNITY**

A photograph of an industrialized construction site. In the background, a building is under construction, featuring large window openings and walls made of precast concrete panels. Scaffolding and wooden formwork are visible. In the foreground, there are stacks of large, rectangular concrete slabs. To the right, a yellow metal frame structure is partially visible. Four workers wearing high-visibility yellow vests are standing on the right side, looking at a tablet. The overall scene is dimly lit, with a dark overlay across the image.

# INDUSTRIALISE



A construction site featuring modular building units. On the left, a unit is under construction with visible wooden framing and insulation. In the center, a completed unit with a dark roof and large windows stands. To the right, another unit is partially visible. Several workers in high-visibility vests are present: one on the far left, one near a ladder in the center, and a group of three on the right. The foreground is filled with stacks of construction materials like insulation and wooden planks. A large yellow crane structure is on the right. A diagonal white line divides the image from the bottom left to the top right. The text 'ON-SITE' is overlaid on the left side, and 'OFF-SITE' is overlaid on the right side.

**ON-SITE**

**OFF-SITE**





**CONSTRUCTION**

**PRODUCTION**







mace  
Factory2

mace  
Factory2

ma  
Fa



Monday



55h 00min

worked man hours







Mace's new patented construction technique will allow us to deliver tall buildings **faster** using...

**40%**



less lorry  
movements and...

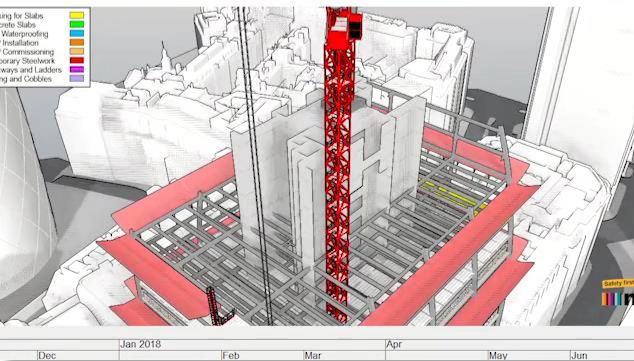
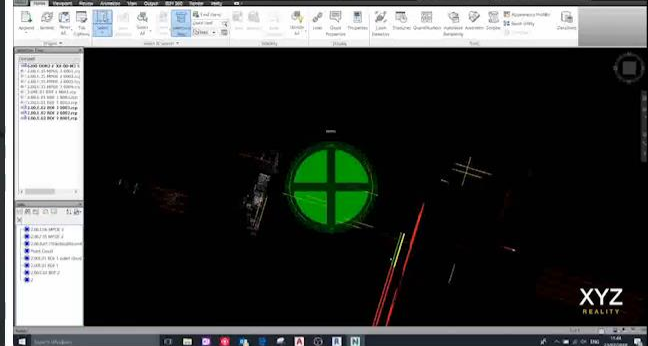
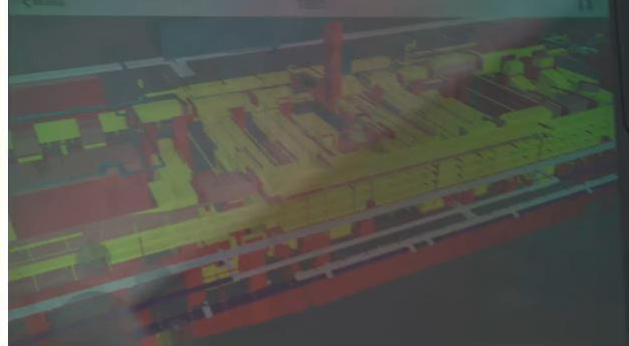


**75%**

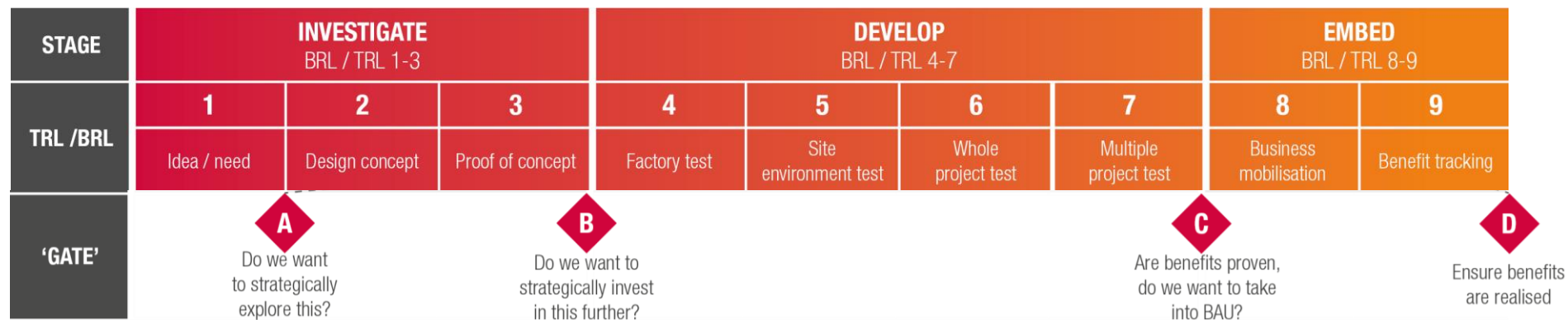
less waste















## 1. CUSTOMER NEED

Identify customer needs and restrictions



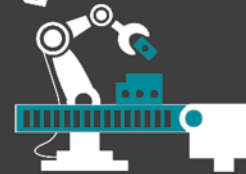
## 2. DESIGN

Design using established standards and component sets



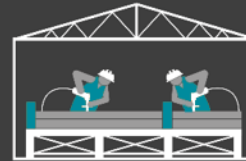
## 3. MANUFACTURE

Manufacture relevant components



## 4. SUB ASSEMBLY

Assemble components into 'sub-assemblies' offsite



## 5. ASSEMBLE

Complete assembly and install onto site



## 6. OPERATE

Performance and customer data captured and feedback into design



**CONSTRUCTION  
TO PRODUCTION**

A photograph of a crowd of people at a protest or demonstration. In the foreground, the backs of several people's heads and shoulders are visible. They are holding up various flags. A large green flag with a black circular symbol (a circle with a vertical line and a horizontal line) is prominent on the right. A yellow flag with a similar symbol is in the center. A blue flag is on the left. The background shows trees with autumn foliage and a cloudy sky. The text "A BETTER FUTURE" is overlaid in white, bold, sans-serif font in the center of the image.

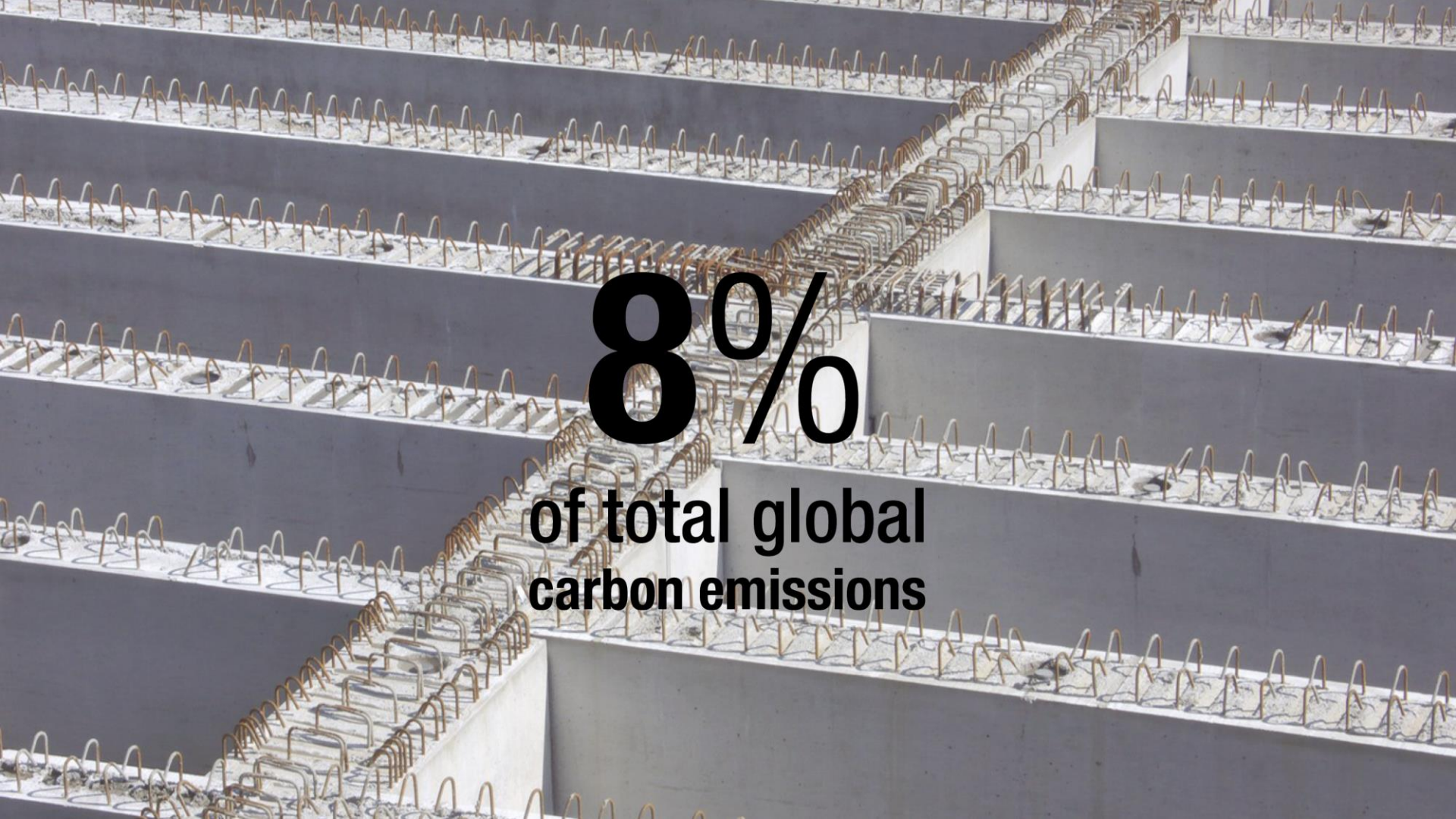
**A BETTER FUTURE**





**37%**

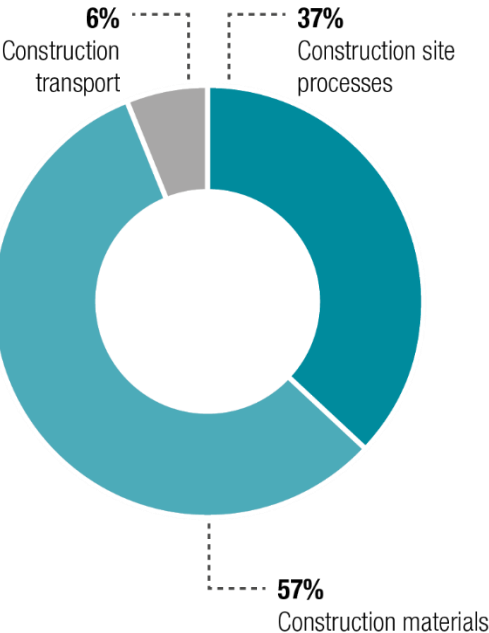
of total global  
carbon emissions

An aerial photograph of a large-scale construction site, likely for a multi-story building or infrastructure project. The image shows a grid of concrete slabs, each reinforced with a network of steel rebar. The rebar is arranged in a repeating pattern across the entire visible area, creating a series of interconnected rectangular frames. The concrete is a light gray color, and the rebar is a dark, rusty brown. The perspective is from a high angle, looking down at the construction site, which emphasizes the scale and repetition of the structure.

**8%**  
**of total global  
carbon emissions**



# Construction carbon



# Operational carbon



The background of the slide is a photograph of numerous Japanese lanterns (andon) hanging from wooden poles. Each lantern is covered in black Japanese calligraphy (kuzushiji). The lanterns are arranged in a dense, overlapping pattern, creating a textured, layered effect. A diagonal white line runs from the top center towards the bottom left, bisecting the image and separating the two main text elements.

**THREAT** **OPPORTUNITY**



The background is a dark, atmospheric landscape at dusk or dawn, with silhouettes of hills and a textured foreground. A bright, diagonal line, resembling a beam of light or a reflection on water, runs from the top center towards the bottom, separating the two halves of the text.

**DOING  
THINGS BETTER**

**DOING  
BETTER THINGS**



An aerial photograph of London at sunset, featuring The Shard skyscraper in the foreground and the River Thames winding through the city. The Tower Bridge is visible on the left. The sky is a warm orange, and the city lights are beginning to glow.

 **mace**

**BELIEVE IN A  
BETTER  
WAY**