



# Secrets To Boosting Your Concrete's Profitability

Tips to help you unlock hidden profits in your concrete business



## Table of Contents

01. Concrete Challenges in 2020	Page 03
02. Reduce Concrete Production Costs	Page 04
03. Create Process Efficiencies	Page 09
04. Innovate to Compete for Market Share	Page 10
05. CarbonCure Pillars of Strength	Page 14
06. Boost Your Profitability	Page 16

## Concrete Challenges in 2020

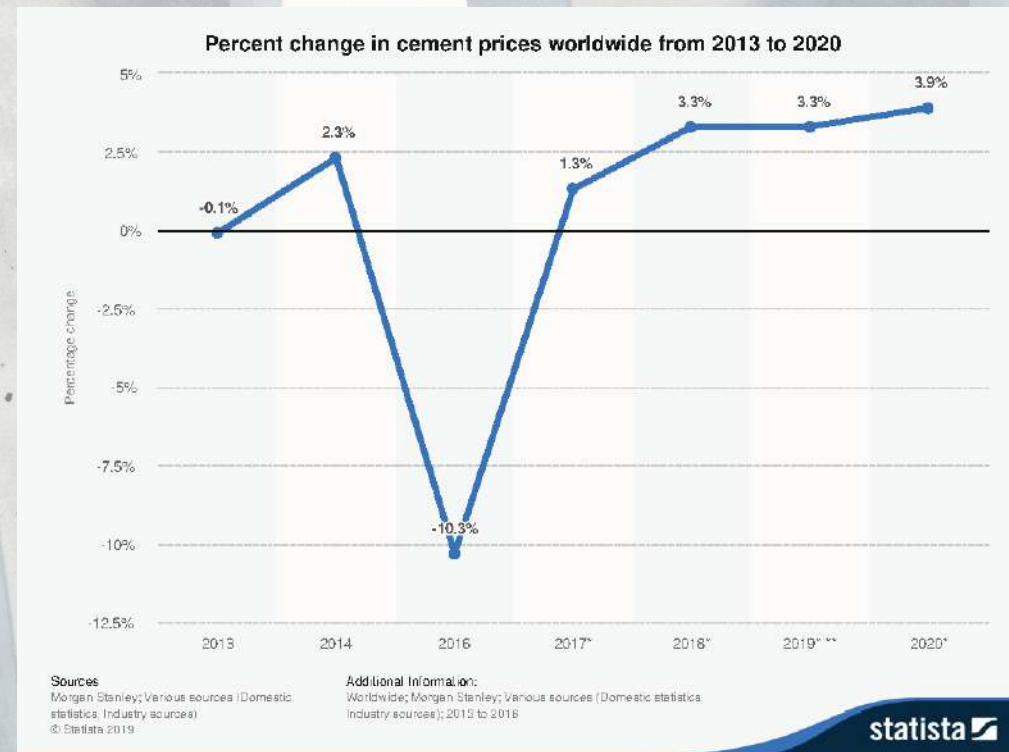
After water, concrete is the **most widely used** material on the planet. The very foundation of modern civilization, concrete builds our homes, provides a means for transport, and forms the very structures that house our healthcare, education, governments, and other industries.

By all accounts, concrete is a good business to be in; however, the industry is not without its unique challenges:

- Rising material and labor costs cut into profit margins — the cost of cement alone is expected to **increase by 3.9 percent** in 2020.
- Increased competition from other building materials erode market share — **wood and steel are gaining popularity** due to price, speed, and changes to building codes and regulations.
- Misconceptions about sustainability damage concrete's reputation — the media portrays concrete as **"the most destructive material on earth."**
- Hiring and employee retention challenges prevail in a labor market cited as among **the tightest in a half-century.**

While these challenges are significant, they are not insurmountable. Concrete producers are resilient and innovative; they constantly strive for profitability and productivity, all while ensuring the quality of the products their customers rely on.

Whether you're looking to **reduce material costs without impacting quality, improve processes to create efficiencies, discover new market opportunities, or gain a competitive advantage**, this ebook outlines ways to boost your company's profitability in 2020 and beyond.



## Reduce Concrete Production Costs

Every business seeks to decrease production costs to retain good profit margins, and the concrete industry is no exception. Concrete producers strive for new material technologies and mix designs to significantly lower production costs, without sacrificing the strength and quality that concrete is valued for.

Since **cement is the most expensive ingredient** in concrete, many industry innovations aim to replace or reduce the quantity of cement required to produce quality concrete:

- Supplementary cementitious materials
- General use Portland-Limestone Cement
- carbon sequestration and utilization technology





## Optimize Mix Designs with Supplementary Cementitious Materials (SCMs)

Supplementary Cementitious Materials (SCMs) are a common feature in mix designs today. The most common are fly ash, a by-product of the coal industry; slag, a by-product of steel production; and silica fume, a by-product of ferrosilicon metal industry.

SCMs act as cement replacements in concrete for various performance-based reasons. However, some of them can significantly reduce the cost of production. Fly ash, for example, **costs significantly less** than cement.

Since their introduction, **studies** and industry testing have proven that SCMs actually increase the strength of concrete over time to levels greater than that of traditional concrete mixes.

SCMs have an environmental benefit too, since they also take post-industrial waste from coal and steel and sequester it for the lifetime of the concrete structure.

## Consider General Use Portland-Limestone Cement

General use Portland-Limestone Cement (PLC) is a type of cement that's **more sustainable** but offers the same performance benefits as general use cement. PLC replaces up to **85 percent of the clinker** used in regular concrete with interground limestone and results in up to **10 percent less** carbon dioxide (CO<sub>2</sub>) emissions.

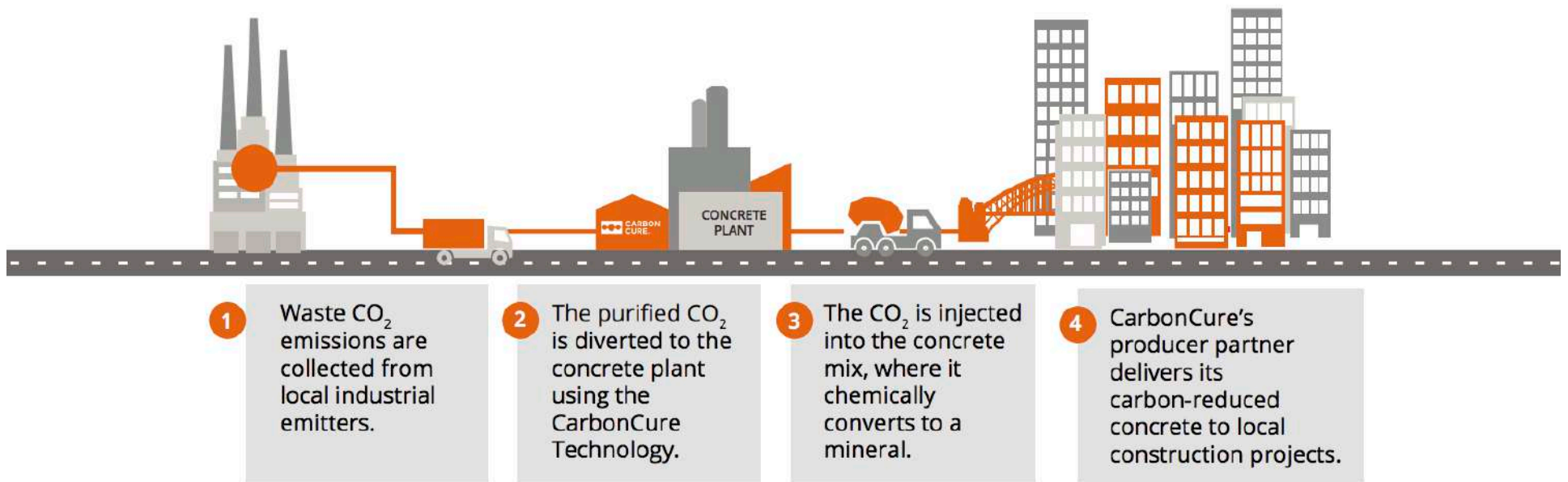
PLC is being heavily adopted along the west coast of North America. It is suitable for all applications from cast-in-place to masonry and precast to ready mix concrete. When blended with SCM, PLC and regular Portland cement perform similarly.

## Implement New Innovations Like CarbonCure

**CarbonCure** provides a technology that works by injecting recycled CO<sub>2</sub> into fresh concrete during mixing. Once injected, the CO<sub>2</sub> undergoes a chemical reaction where it transforms into a mineral, improving the compressive strength of the concrete, which enables the reduction of carbon-intensive cement content in mix designs.

While this approach is relatively recent, the strategy to replace cement and sequester post-industrial waste has been around for decades through the use of many SCMs. **Research and lab-testing** have proven these approaches to be safe, strong, and durable.

### The CarbonCure Solution



The process of how carbon from the atmosphere ends up in concrete used in construction projects.

## Use Technology to Improve Delivery Processes

Customers want the right product according to their schedule. Delivery and quality control process improvements can significantly impact a producer's bottom line while maximizing customer satisfaction and loyalty.

Many producers are using dispatch and quality software like **Command Alkon**, **Jonel**, **Marcotte**, or **MPAQ** to unite data from the quotation phase to job scheduling, order entry, resource planning, material planning, mixing software, dispatch, and delivery.

In this way, producers can control costs by centralizing dispatch processes and performing batching from the plant closest to the delivery site.

This can also help reduce waste. For example, on a large project, there could be up to 50 trucks per day delivering concrete. With the right technology in place, producers can give their contractors access to the GPS location and estimated arrival time of inbound trucks so that there is no wastage created from trucks arriving when the site is not ready.

These technologies help to improve the entire concrete supply chain.





## Attract and Retain Employees

The concrete industry, like the wider construction industry, is facing a labor shortage. According to the [Bureau of Labor Statistics](#), 32 percent of workers are between 45-64 years old in 2018. This is coupled with a [lack of interest from younger workers](#) to work in construction, despite the surplus of high-paying positions on job sites.

Finding qualified drivers is one of the biggest challenges. The ability to drive a concrete truck is a unique skill, as drivers must understand the technical considerations regarding where to safely place the truck, how to properly engage the pumping mechanism, and so on. It's an important role in ensuring the safety of road users and site workers. Plus, the driver is the last connection between the plant and the site to ensure quality is maintained.

Tapping into local colleges is a great way to expose your business to qualified talent. Offer internships, training, or apprenticeship programs to encourage young graduates to join your business. You can also establish partnerships with groups like veterans associations or women re-entering the workplace after raising their families to bring diversity to the workplace and re-train talent.

Further, by adopting sustainable practices and innovations, concrete producers can attract environmentally-conscious Millennial and Gen Z candidates.

## Create Process Efficiencies

As well as creating efficiencies in raw materials, concrete producers can create efficiencies in their processes to improve the profitability of their businesses by:

- Using technology to unite data and improve delivery processes
- Building strategies to attract and retain talent



## Innovate to Compete for Market Share

The concrete industry is **one of the oldest industries** in the world. The reason for its longevity is its ability to innovate to meet the current and future demands of modern society.

Facing the challenges of rising costs, the public pressure for sustainable building materials, and changes to regulation favoring green building practices, the concrete industry is undergoing a transformation. To weather these significant challenges, concrete producers are strategically planning for the future, looking to **new innovations** so they can effectively:

- Reclaim market share from wood
- Position sustainability as a competitive advantage
- Build more resilient structures that withstand the ever-increasing occurrence of natural disasters
- Collaborate with local structural engineers and concrete procurers to permit concrete mix innovation



# Reclaim Market Share from Wood

Mass Timber Construction (MTC) is gaining increased attention from designers and regulators around the world — and taking market share from concrete producers.

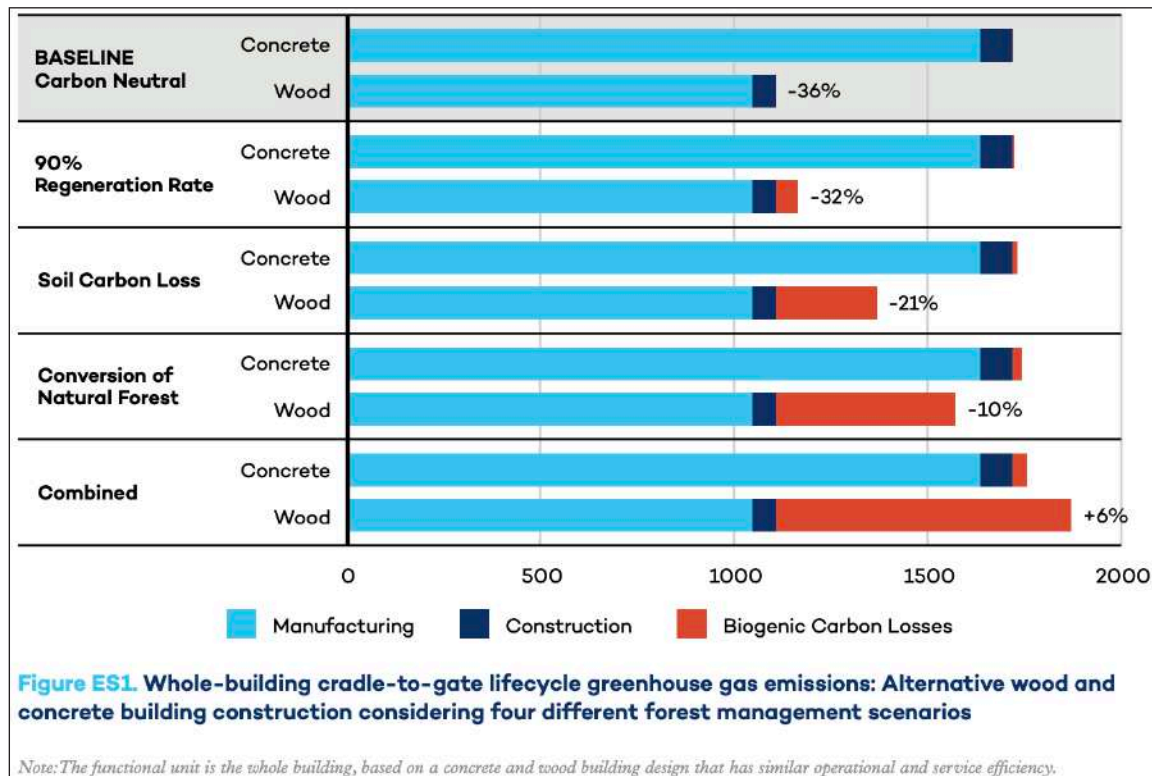
There’s a perception that wood’s inherent ability to store carbon makes it a more sustainable building choice. However, the carbon costs associated with wood products are not fully understood. **New studies have found** that biogenic carbon emissions and sequestration related to the production and end-of-life stages of wood building products hold the most significant uncertainty in existing life-cycle assessments.

Some studies also found that as little as **15 percent** of the carbon stored in a standing tree is sequestered in the final wood product.

To counter the potential misconceptions about the sustainability of wood, the NRMCA has launched a **Build with Strength** campaign that highlights how much more sustainable concrete really is:

- It is more resilient to natural disasters
- It lasts longer
- It’s local — most concrete is **used within a small radius** of where it is produced
- It can continuously sequester carbon throughout the lifetime of the structure

By training salespeople to handle the sustainability objections, producers can reclaim market share lost to wood in recent times.



## Position Sustainability as a Competitive Advantage

Concrete's sustainability challenges are well-documented and hard to ignore. Traditional concrete **produces** more CO<sub>2</sub> than the aviation industry. That's because cement, the key ingredient that gives concrete its strength, has a large environmental footprint.

According to the International Energy Agency, cement is responsible for up to **7 percent of the world's CO<sub>2</sub>** emissions and 7 percent of industrial energy consumption.

The increase in climate movements is pushing government bodies and industries to take action against the CO<sub>2</sub> produced in construction:

- The **Structural Engineers 2050 Challenge** aims to inspire structural engineers to contribute towards the global vision of Zero Carbon buildings by 2050
- The **American Institute of Architecture 2030 Challenge** sets out targets for all new buildings, developments, and major renovations to be carbon-neutral by 2030
- State and local governments in Oregon, New York, and other areas are requiring producers to have third-party-verified, product-specific Type III Environmental Product Declarations (EPDs)

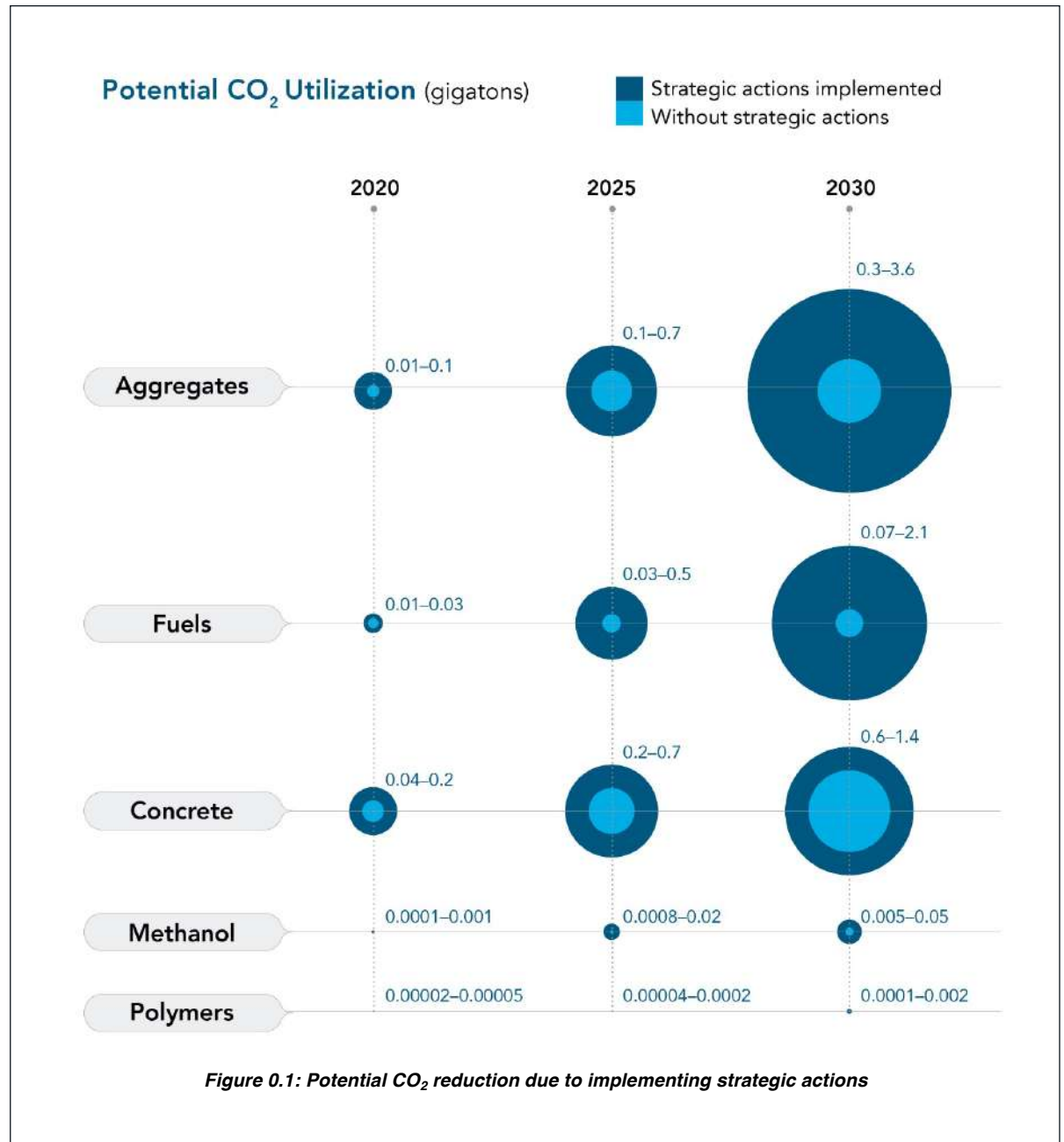
While this sounds gloomy for concrete producers, new innovations in concrete production actually present a great opportunity. **CarbonCure** offers one such solution. When concrete producers inject CO<sub>2</sub> into concrete using the CarbonCure Technology, CO<sub>2</sub> emissions that were once in the atmosphere are used to produce concrete that is not only more sustainable, but stronger. The strength gain from the added CO<sub>2</sub> enables producers to reduce a percentage of cementitious content in select mix designs, while still maintaining strength requirements.



Further, due to the chemical reaction that occurs between the CO<sub>2</sub> and the concrete mix, the CO<sub>2</sub> becomes a mineral and therefore is permanently embedded within the concrete, never to be re-released into the atmosphere.

This CO<sub>2</sub> utilization in concrete is not only sustainable — it makes good business sense. **Analysts say** it has the potential to become a \$400 billion global industry by the year 2030.

Producers that are not thinking about developing sustainable concrete mixes will miss out on this business opportunity and lose significant market share to competitors, as more industry associations and government bodies set standards for carbon-reducing building practices.



Global Roadmap for Implementing CO<sub>2</sub> Utilization | CO<sub>2</sub> Sciences and The Global CO<sub>2</sub> Initiative

## CarbonCure Pillars of Strength

Concrete producers are truly unsung heroes. After all, they are responsible for the strong homes that protect us from the elements, the reliable infrastructure that gets us safely from A to B, and the structures that house our industry, healthcare, education, and government institutions — infrastructure that will be used for generations to come thanks to the durability, longevity, and sustainability of concrete.

CarbonCure works with concrete producers like Ozinga Ready Mix and Thomas Concrete. Today, they're saving tons of carbon from the built environment and adopting new innovations to secure their position as pillars of strength in their communities for generations to come.

### Ozinga Ready Mix

- 21 plants with the CarbonCure Technology
- 436,000 yd<sup>3</sup> of CarbonCure concrete poured
- 6,600 tons of CO<sub>2</sub> saved

**“To find a product that strengthens concrete is always a good thing, to discover a way to make concrete more sustainable is a great thing; but to find a solution that does both is exactly the kind of progress Ozinga wants to be a part of.”**

**Ryan Cialdella**  
VP Research and Development  
Ozinga Ready Mix

*[Ozinga Ready Mix's CarbonCure Journey](#)*

### Thomas Concrete

- 26 plants with the CarbonCure Technology
- 2 million yd<sup>3</sup> of CarbonCure concrete poured
- 32,700 tons of CO<sub>2</sub> saved

**“We installed CarbonCure at 26 of our plants because it just makes good business sense.”**

**Alan Wessel**  
CEO  
Thomas Concrete

*[Thomas Concrete's CarbonCure Journey](#)*

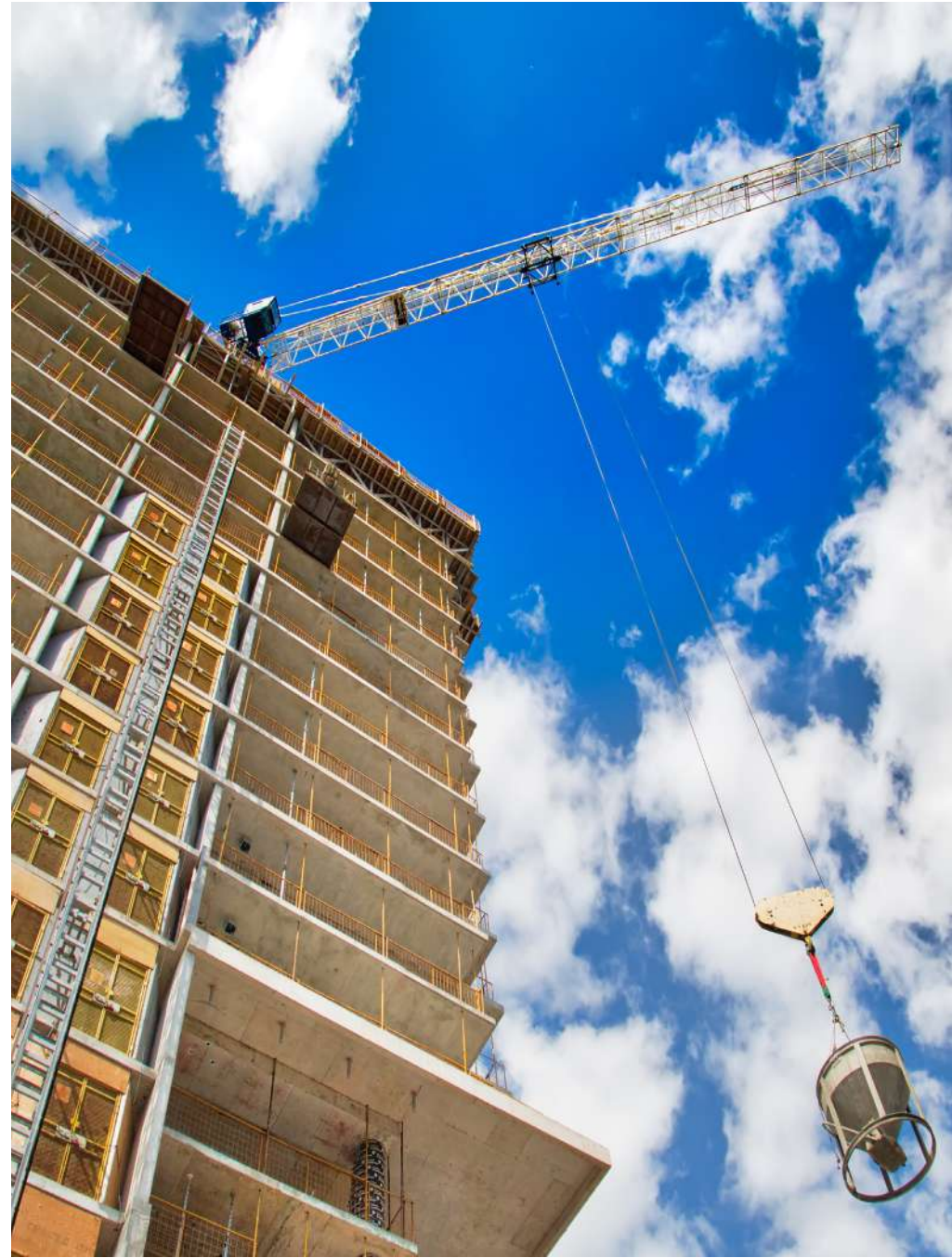
## Collaborate with Local Structural Engineers and Concrete Procurers to Permit Concrete Mix Innovation

We know that cement is the most expensive and least environmentally-friendly ingredient in concrete. However, there are certain construction market segments, such as infrastructure, that are understandably risk-averse. As a result, mix designs for these projects are often dramatically over-specified, requiring cement content that achieves much higher strength performance than needed, leading to higher costs and higher carbon emissions.

The NRMCA's **Prescriptive to Performance (P2P) Initiative** provides a suite of resources to support concrete producers who choose to engage in dialogue with local engineers and specifiers on concrete specification best practices. It has been shown that performance-based specifications enable the most sustainable and highest-quality concrete, while potentially minimizing project costs.

Many prescriptive specs exist simply due to legacy, and many engineering firms and government bodies are actively working to remove these unnecessary barriers. Other firms are unaware of the cost and environmental impact created by their outdated specifications. By engaging in dialogue and sharing expertise, concrete producers can support the engineering and concrete procurement community in its objectives to build more sustainably, while maintaining high-quality standards.

CarbonCure provides a great sustainability narrative that acts as a launching pad for dialogue about concrete specification best practices. Engineers and government procurement officers are excited to talk about CarbonCure and are therefore motivated to remove prescriptive specification barriers. CarbonCure's sustainability team can provide support to CarbonCure customers engaging in dialogue with engineers.



## Boost Your Profitability

Talk to CarbonCure about improving your operations while growing your business within the green building market.

CarbonCure Technologies Inc. is the global leader in CO<sub>2</sub> utilization technologies for the world's most abundant man-made material: concrete. The retrofit CarbonCure Technology chemically mineralizes waste CO<sub>2</sub> during the concrete manufacturing process to make greener and stronger concrete. CarbonCure has partnered with nearly 200 concrete producers across North America and Southeast Asia to create new production cost savings, gain competitive advantages and reduce the carbon footprint of the built environment.

If you have any questions, connect with CarbonCure by phone +1 (902) 442-4020 or by email [info@carboncure.com](mailto:info@carboncure.com), or visit [www.carboncure.com](http://www.carboncure.com) to learn more.

