



**CONCRETE CASE STUDY: STRENGTH**

**ONE WORLD TRADE CENTER**  
285 Fulton Street, New York City, New York 10007

**Opened:** October 2014    **Height:** 1,776 feet    **Floors:** 104  
**Architect:** Skidmore, Owings & Merrill (David M. Childs)  
**Owner:** Port Authority of New York and New Jersey  
**Concrete Subcontractor:** Collavino Construction Co. of Jersey City, NJ



## A SHINING BEACON OF STRENGTH.

One of the newest buildings etching the New York City skyline, One World Trade Center (WTC) is a soaring example of strength, safety, and sustainability. Nearly 150,000 cubic yards of high-strength ready mixed concrete was used in the main spine of the tower. In fact, prior to WTC, the concrete strength used had never been utilized on such a scale in building construction. High-strength concrete enables safer structures that are more resistant to wind, seismic, and other impact forces.

**01. A solid concrete core.**

A reinforced concrete core provides WTC with an extra-strong backbone. The walls of the core measure three feet thick or more above ground, and up to twice that below grade.

**02. Unprecedented strength.**

Prior to WTC, 14,000-psi ready mixed concrete had never been used in a project of this magnitude. At 56 days, the high-strength concrete used in WTC actually reached 18,000 psi.

**03. A more sustainable formula.**

Fly ash, slag, and silica fume were used to enhance the concrete mix making the whole building more sustainable.

**04. Concrete made for NYC traffic.**

The concrete used needed a workability window of at least two hours to make it through New York City traffic before being pumped distances up to 300 feet at the WTC site.

**05. Built on a fortified pedestal.**

The tower stands on a 200-by-200 feet concrete pedestal that rises 70 feet off of the ground. The structure is reinforced both above and below grade, in an effort to protect the tower's integrity in the event of an attack.