



In light of Giatec Scientific's recent visit to Las Vegas for the World of Concrete 2015 trade show, we would like to take a closer look into the current and future infrastructure of the city. Aside from the infamous partying and gambling, Las Vegas is also well known for incredible infrastructures, in particularly the architecture of some of the largest hotels in the world. The city's population increased by over 95% between the mid-1980s and mid-1990s, and is still continuously growing at an exponential rate. With a population explosion such as this, the city must support the change and constantly update its infrastructure through repairs and new projects.

The Harmon Hotel, owned by MGM Mirage, and designed by Foster & Partners, was discovered to have major infrastructural flaws in 2008; over two years after the project broke ground. By 2009, it was thought that the hotel could be partially redesigned and was still set to open in time; however, in 2015 we know this to have failed as its demolition is underway. Due to its location in the city center, the break apart of the building must be done piece by piece, and will cost at least \$11 million USD. The tower itself is estimated to have cost around \$275 million USD and made zero dollars in profit. When completely demolished, the location of the building will leave an odd gap within the city center, but there is no doubt that a new project will be underway soon after.

## What Went Wrong?

There have been many parties pointing fingers at each other in the hopes of taking pressure of themselves, but it seems that one party cannot be held accountable for the entire project. The problem originated when reinforced steel was improperly installed on 15 floors by Pacific Coast Steel. An error such as this should have been discovered by an inspection firm, however, county inspectors did not catch the mistake and Converse Consultants released false verifications. The Consulting firm is responsible for falsifying over 60 daily reports between the months of March and July of 2008, affirming the proper installation of the steel bars. Defects were eventually detected in July 2008 by the project's structural engineer.



## Sustainability is Key

In the concrete industry, a lot can be learned by the mistakes made during the design and construction of the Harmon hotel. The use of smart technologies for the design of extravagant buildings is escalating in importance. As architects create new ideas for projects that require innovation, the testing equipment must accommodate this. Giatec Scientific, Canada's only smart concrete testing technologies company has designed and manufactured many devices to test electrical resistivity, chloride permeability and corrosion to name a few. The company is continuing to innovate, with a new product called the iCor being released to the public market by the end of this year, introducing corrosion detection technology that for the first time ever, does not need a connection to the rebar. Hopefully, the next big construction project undertaken in Las Vegas will use devices like Giatec's to guarantee sustainability, durability and most importantly safety.

## Sources:

[Architectural Record by Tony Illia](#)

[America's Interfaith Infrastructure](#)

[Vital Vegas](#)