



# What 5G Means for Your Building's Cell Phone Coverage Today

## Woohoo -- 5G is here!

Just kidding. Despite the hype being advertised by the big phone carriers and even "5Ge phones" being introduced into the market, true 5G for the public is still several years away. That little "e" in 5Ge stands for evolution. Meaning it's an evolution *toward* 5G but not actually 5G as defined by the FCC's specifications. Some companies claim that carrier aggregation (combining several bands at once to provide faster data rates) qualifies as 5G but honestly, it's just enhanced 4G LTE.

Even so, building owners and managers are wise to prepare for 5G today. Because here's the thing: **5G is coming.** If your building puts the infrastructure in place now, you can save money, save time and experience fewer cell coverage losses when 5G is actually deployed large scale.

**Here are the questions that savvy building owners/operators have been asking us:**

## How will 5G effect the cell service in my building?

Your current cell service will not be affected; if you have great 4G now the arrival of 5G will not change that. Even better, 5G will add drastically improved data speeds -- up to 100 times faster broadband -- plus "smart" networks that can evolve with your growing Internet of Things (IoT) demands. Of course, before you can enjoy all that, you'll have to bring the 5G into your building from outside with a cellular enhancement system or "cell booster".

## If I buy a booster today will it still work in the future?

Having a cellular repeater system (aka cell enhancement or cell booster) for your building's 4G and 4G LTE networks already provides significantly better cell coverage today. And according to top cell booster manufacturer, Wilson Electronics, "Those 4G and 4G LTE networks will continue to be in use well into the 2030's."

This is the infrastructure we referred to above. Nextivity, another top cell booster manufacturer, agrees: "The most sensible 5G strategy for a middleprise building owner is to pick equipment that will withstand a transition from 4G LTE to 5G within the existing < 6 GHz bands being provided inside the building." Both Wilson's and Nextivity's Cel-Fi products will be able to handle these transitions.

## But if I already have strong 4G cell coverage in my building, won't I automatically have strong 5G service?

Not necessarily. It's possible to get strong 4G coverage without any sort of enhancement system because 4G frequencies can travel further. It's extremely unlikely you'll have strong 5G coverage without technological help. Here's why: 5G provides such amazing speeds by broadcasting over teeny radio wavelengths (aka microwaves) which are higher frequency (smaller) than 4G LTE waves, meaning they don't have to travel up and down huge hills and valleys like 4G waves. Therefore, data can flow across them much faster and more reliably. Think of 5G as a sprinter, moving across short distances very quickly whereas 4G and 4G LTE are more like distance runners, pacing themselves for the long haul. However, like a sprinter, the 5G waves can't travel that quickly for very long.

For instance, 5G signal cannot travel to your building from a massive cell tower a mile away or be broadcast from a neighboring rooftop antenna like 4G. In fact, 5G waves can barely travel across the street if obstacles like trees, people or walls are in their path.

To compensate for this, the big phone carriers will provide lots and lots of smaller antennas, mounted very close together on every lamp post and street light, to basically blanket the ground-level with their sweet, sweet 5G signal. Everyone on the street will have lightning-fast cell coverage and download speeds. But if your building is more than three stories tall or has, you know ... WALLS, you will not automatically get 5G coverage indoors.

## Wait -- 5G can't travel through walls? My building has walls.

What happens with 5G at street-level stays at street-level. With no rooftop cell towers broadcasting signal to the upper floors of your high-rise, coverage will be non-existent up there. 5G will offer incredible speeds outside in the open but 80% of cell phone usage takes place inside a building and that's where 5G hits a wall -- literally.

NetworkComputing.com agrees, "The extremely high-frequency nature of the 28 GHz band means indoor coverage will be very poor. Even using the lower frequency 10 GHz spectrum means that 5G coverage would only exist inside of untreated glass windows, but likely nowhere else inside of a building. As a result, when 5G becomes available, most buildings will require in-building cellular aids for reliable in-building coverage."

## What can I do right now to be ready for 5G?

Building owners don't need to wait for 5G to install a cell repeater system. The digital systems Illuminati Labs use today allow us to deploy infrastructure that provides the foundation for 5G and private LTE networks as well as immediately broadcasting state-of-the-art 4G, 4G LTE and 4G LTE enhanced networks.

## How do I get started?

Call Illuminati Labs to have a simple discussion about your concerns and needs. We assess a myriad of factors such as the availability of cell service outside of your building, how easily the inner walls and ceiling can be accessed (is it a drop tile ceiling or hard lid?), whether your system will be fiber-based or over-the-air, and many more. We can conduct a detailed site survey, determine the most efficient use of your budget and quickly get a proposal back in your hands. From there, Illuminati