

Cooling, a Historical Necessity, and an investment for the Future

In search for the story that made Air-Conditioning what we know it today, I was impressed when I learned that Man's quest for cooling went more than 2000 years back! It is known that the concept of Air Conditioning was been applied in **Ancient Rome**, (300BC) where aqueduct water was circulated through the walls of houses to cool them.

The quest continues with similar techniques in **medieval Persia** where they used cisterns and wind towers to cool buildings during the hot season.

Forwarding in time, in the 2nd century **Chinese inventor Ding Huane** of the Han Dynasty invented a rotary fan for air conditioning, with seven wheels 3 m in diameter and manually powered. In 747, Emperor Xuanzong of the Tang Dynasty had the Cool Hall built in the imperial palace, which is described as having water-powered fan wheels for air conditioning, as well as rising jet streams of water from fountains.

In modern history, the milestones are:

In 1758, **Benjamin Franklin and John Hadley**, a chemistry professor at Cambridge University, conducted an experiment to explore the principle of evaporation as a means to rapidly cool an object. Franklin and Hadley confirmed that evaporation of highly volatile liquids such as alcohol and ether could be used to drive down the temperature of an object past the freezing point of water.

In 1820, British scientist and inventor **Michael Faraday** discovered that compressing and liquefying ammonia could chill air when the liquefied ammonia was allowed to evaporate.

In 1842, Florida physician **John Gorrie** used compressor technology to create ice, which he used to cool air for his patients in his hospital in Apalachicola, Florida.

He hoped eventually to use his ice-making machine to regulate the temperature of buildings. He even envisioned centralized air conditioning that could cool entire cities. Although his prototype leaked, and performed irregularly, Gorrie was granted a patent in 1851 for his ice-making machine. His hopes for its success vanished soon afterwards when his chief financial banker died; Gorrie did not get the money he needed to develop the machine. Dr. Gorrie died impoverished in 1855 and the idea of air conditioning faded away for another 50 years.

In 1902, the first modern electrical air conditioning unit was invented by **Willis Haviland Carrier**, (doesn't that name sounds familiar?) in Buffalo, New York.

After graduating from Cornell University, Carrier, found a job at the Buffalo Forge Company. While there, Carrier began experimentation with air conditioning as a way to solve an application problem for the Sackett-Wilhelms Lithographing and Publishing Company in Brooklyn, New York, **when the first "air conditioner", designed and built in Buffalo by Carrier, began working on 17 July 1902.** .

That is the story of the evolution of Air conditioning, from its birth back in the darkness of time to its modern history milestones.

At Present, cooling has transformed itself from a rudimental luxury to an inevitable necessity in a region where, one day, natural resources such as oil and gas will diminish, but the need to cool will remain. Now if air-conditioning does not sound like a solid long-term business investment, what does?