

My Summer Working in the Triangle Building

During my first summer at MIT, in 1976, I worked in MIT's undergraduate research program (UROP). Our research group of five students managed to secure a large office in the brand-new Chemical Engineering Building, Building 66, more commonly known as the Triangle Building. Building 66 was unique among buildings on campus, as the building's footprint was in the shape of a 30/60/90-degree right triangle.

The Triangle Building, along with three other buildings on campus, was designed by renowned architect and MIT graduate, Dr. I. M. Pei. Dr. Pei recently passed away, in 2019, at the age of 102, and he left a legacy of unique and innovative building designs.

Dr. Pei's name, Ieoh Ming Pei, interestingly enough, translates into English simply as "I am Pi." Building 66's triangular design was, therefore, the culmination of his lifetime dream, as the angles of his triangular building summed to a total of 180 degrees, or more aptly, π radians.

The Triangle Building's construction was not without its problems, as construction crews trained in dealing with only 90-degree corners couldn't quite get the hang of the building's unique angles, leading to a variety of acute construction issues. Eventually, plastic 30/60/90 drafting triangles were handed out to each construction worker, with the admonition: "If at first you don't succeed, try triangle again."

Despite these precautions, as the building neared completion, Dr. Pei arrived for a final inspection, and quickly found a serious flaw.

"Something's not quite right," he noted.

Sure enough, they measured the building's corner and found it to be only 89 degrees. Rework ensued, at least to the degree that was necessary.

The building was finally completed in the spring of '76, which means members of my research team were among the very first occupants. We got a tour of the building's office spaces before picking out a space for our summer work. We were angling to get the best space we could. The tour guide showed us just a single office, and then exclaimed, "No sense in showing you the rest, they're all similar to this one."

"If that's the case, what's the point of the tour?" I asked.

He simply gestured toward the building's 30-degree corner. Point taken.

So, at the start of the summer, we occupied a huge 30/60/90-degree office on the hypotenuse side of the building. (Note: for non-MIT students—this is the long side) This side of our office was a continuous window that looked out onto a courtyard and a sidewalk that provided a view of the many MIT students headed to and from nearby Kendall Square in Cambridge. So, at least in the case of the Triangle Building, the square of the hypotenuse was Kendall.

Early on, we divided our research team into two competing groups, one along the office's shortest wall and the other along the opposite wall. But we discovered when we got the groups back together, that our protracted discussions often veered off on tangents, so we scrapped that idea and tried a secant approach where we relocated the opposite wall group members over to the hypotenuse wall.

Our office was so new it didn't have any interior partitions. So, one lingering question remained unanswered: Would MIT eventually install cubicles or triacles?

Our office thermostat offered a choice of several modes of operation: Fahrenheit or Celsius, and Degrees or Radians. We ended up using Fahrenheit Radians and argued all summer where to set it between 1.25 and 1.35 radians. Apparently, in the wintertime, only selected modes allowed for use of the building's radiant heating.

Interestingly enough, MIT's financial office had two loan offices located in the building, one on each of the shorter building legs. One of the offices was used when you needed to sign for a loan, the other when you had to co-sign.

Even the bathrooms conformed to the building's unique 30/60/90 shape. The sharp pointy stall at the bathroom's 30-degree corner was reserved for the mathematically handicapped. I used it just once, out of curiosity, and wouldn't you know it, when I exited, I immediately came face-to-face with a humanities major, who, judging by the scowl on his face, apparently had been waiting for some time.

The building had six floors, providing the third dimension to the triangle, so the building stairways were appropriately marked with units of stair-radians.

In the sub-basement of the building, at the very corner of the 30-degree angle, existed a small empty triangular-shaped storage room, whose shape precluded any functional use, so it was left empty and unlocked. The room was affectionately known on campus as the 3rd Tomb of the Unknown Tool. One of my fraternity brothers once had a tryst in there with his girlfriend. He eventually figured out the appropriate tool to use for that effort.

Other Triangle Buildings exist in various places. By far the most famous is the Flatiron Building in Manhattan, whose triangular shape resulted from the convergence of streets at a ridiculously narrow angle. The building is much beloved, judging by its frequency of appearance in movies and TV. Real estate professionals secretly admit that the building contains many oddly-shaped spaces that don't easily accommodate standard office furniture. Unfortunately, at age 64, I find that this statement also applies to me, personally.

The fact that I recall so much about the Triangle Building, but so little about my research project, a solar energy concept that involved using "solar ponds" to heat water for electricity generation, speaks volumes about the Triangle Building's uniqueness and charm. It certainly couldn't have been due to the poor results of our research.

I note with some dismay that MIT has recently begun a fundraising drive to renovate the interior of the Triangle Building. It's always a blow when something that one has experienced as brand new in an earlier part of life is now deemed to need a complete and total overhaul. All systems and sub-systems of the building are considered to be substandard and in dire need of an upgrade. Another statement that unfortunately also applies to me, personally.

Everything I have written above is true, at least to the best of my ability to recall things that happened forty-five years ago—which means that some of it *may* be true. But if it isn't true, it should be.