

ST. PAUL'S CATHEDRAL

[by John H. Lienhard](#)

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Today, a great architect hides his intentions. The University of Houston's College of Engineering presents this series about the machines that make our civilization run, and the people whose ingenuity created them.

When I was young in St. Paul, Minnesota, I liked to ride downtown in a streetcar. It would rattle past a cathedral called St. Paul's with a lovely big dome. The name was a kind of double entendre -- the name of the city and the name of the great English cathedral that it copied -- St. Paul's in London.

No child of WW-II can forget St. Paul's great dome standing out against London's bomb-lit night sky. It survived the Blitz, even though it'd been rebuilt repeatedly since AD 607. In 1665 the current building was a 500-year-old Gothic cathedral. It'd never really been finished, and now it was falling apart.

The brilliant young architect Christopher Wren was told to rebuild the old wreck. He put a radical plan before the Cathedral Planning Commission. He'd tear the old Gothic building down and replace it. He'd cap the new building with a dome like the ones on Renaissance churches in Europe. The Commission would have none of that. Cathedrals had spires -- not domes. St. Paul's would be patched, not rebuilt; and Wren would place a new spire upon it.

Wren rankled for a year. Then nature intervened. The terrible fire of London finished off the old building, and Wren was free to design a new one. The Commission still rejected his design, even though King Charles rather liked it. Finally the King gave him a loophole. He told Wren to erase the dome from his plans and draw in a steeple -- any old steeple. Then the King put a phrase in Wren's contract that granted him *liberty to make such variations as from time to time he should see proper*.

Wren's design was topped with a hideous, out-of-proportion steeple. But it satisfied the Commission, and he went to work. It took 35 years to build the new cathedral -- far longer than the collective memory of any committee. As the structure rose, Wren made a careful sequence of changes. The bogus steeple gracefully gave way to a marvel of engineering -- a great dome, 110 feet across, soaring 368 feet in the air. To hold it without buttresses, Wren girdled it with a huge iron chain hidden by the facing stone.

That old rusted chain was finally replaced by stainless steel in 1925. And you can still go to London, sit in a pew, and see what a 92-year-old Wren saw on the last Sunday of his life -- an interior that seemingly stretches to infinity in five directions, north, south, east,

west -- and upward. The view upward -- past the whispering gallery to that splendid ceiling -- isn't easy to forget. Wren was buried in the building under a small plaque.

Of course, the building itself is his monument. It's also a monument to the will of this gentle genius who found a way to show people what couldn't be explained to them.

I'm John Lienhard, at the University of Houston, where we're interested in the way inventive minds work.

(Theme music)

Stirling, N., *Wonders of Engineering*. Garden City, New York: Doubleday and Company, Inc., 1966.



St. Paul's Cathedral as it appeared in the 1911 *Encyclopaedia Britannica*