

# WHO ARE YOU MR. CLAUDE NEON?

by Pieter Sijpkes.

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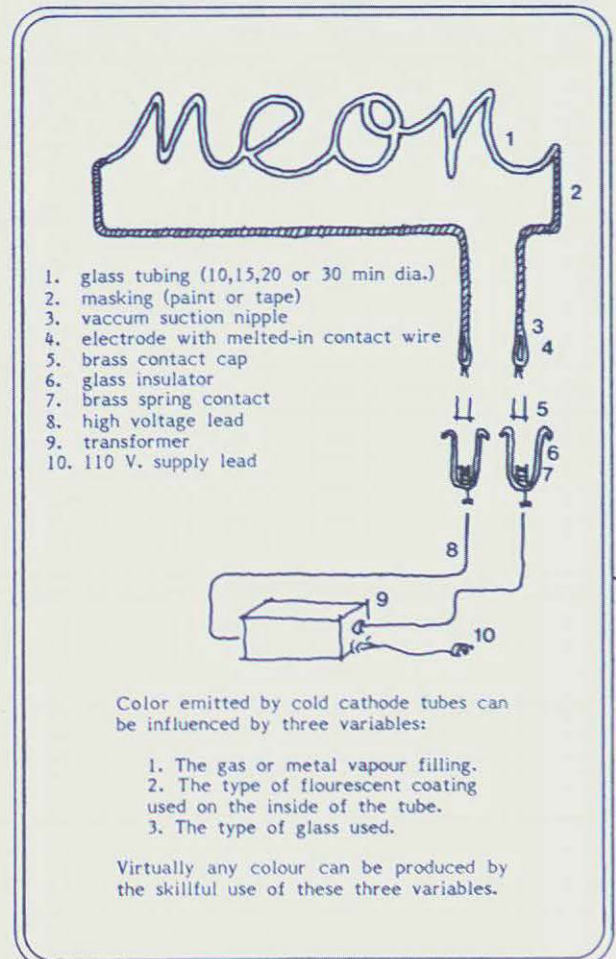
On August 12th, 1912, Mr. George Claude was awarded patent no. 458-697 in Paris: "...small caliber neon tubes for showing bright tension discharges, or for sources of light...".

The neon tube was born. As early as 1858, a German scientist, Heinrich Geisler put an electric current through a glass tube which had been air-evacuated as well as was possible at the time. The glow that could be observed in the vacuum was the first cold-cathode discharge illumination. Prominent scientists such as Faraday and Hittorf soon experimented with low pressure gas fillings such as carbon dioxide and nitrogen. It was D.M. Moore who overcame the problem of the short life of these tubes by adding a regulating valve which stabilized the gas pressure in the tubes and the "Moore tube" quickly found wide application.

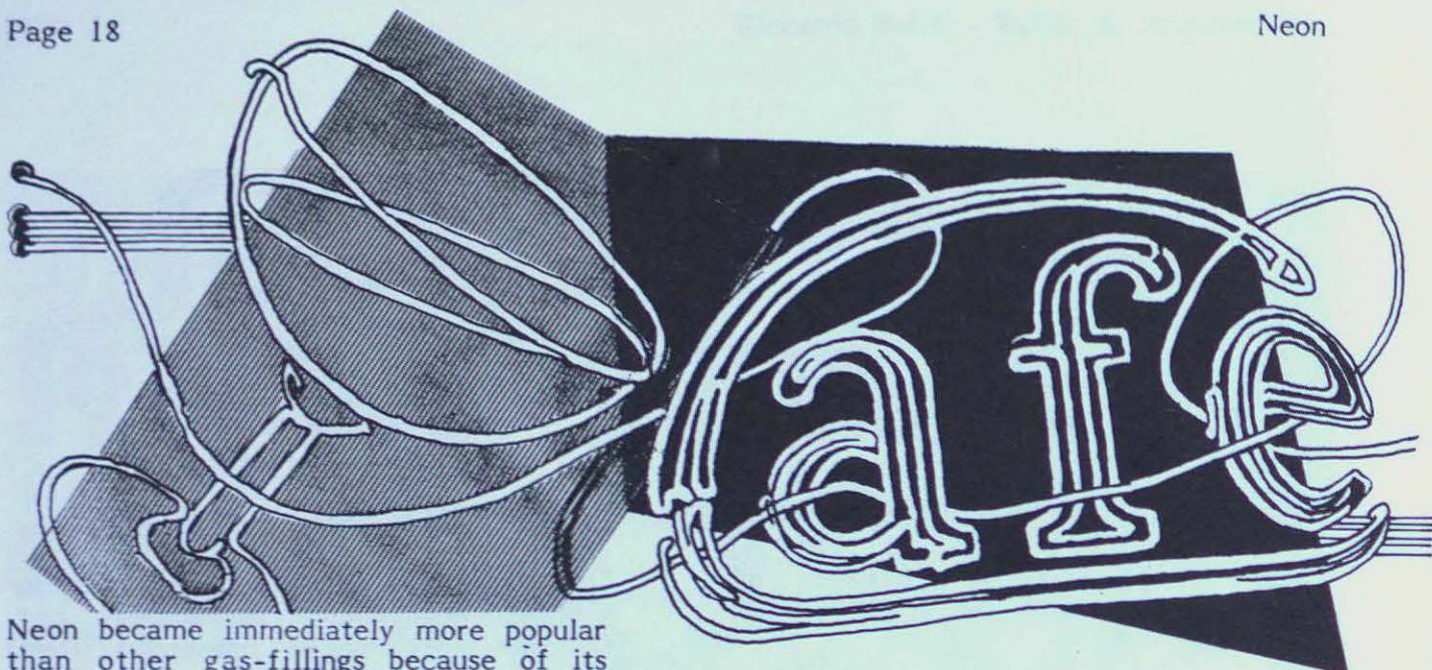
The soft golden yellow light emitted by nitrogen and the almost perfect "day light" emitted by carbon dioxide gas were put on display for Queen Victoria's Jubilee.

George Claude succeeded in 1895 to liquify air. As had been discovered by Ramsay and Raleigh, the air contains minute quantities of "rare" or inert gases such as Helium (after Helios), Neon (new), Argon (idle, inert) and Krypton.

The first use of liquifying air was to supply the demand for oxygen and nitrogen for various industrial uses. Claude introduced neon-gas into a Moore-tube to see if he could find a use for the by-product of his liquid air process. It took Claude and others until 1925 to solve a host of problems with luminous neon discharge tubes. The basic components of the system have hardly changed since 1925:







Neon became immediately more popular than other gas-fillings because of its intensely bright red-orange glow and because of its high light output per watt input. The term "neon tube" has in common usage become synonymous with Argon tube, Krypton tube and many other tube fillings. The proper name is "cold-cathode high voltage discharge lamp". People in the twenties and thirties fell in love with the new invention and "neon" signs sprang up around the globe. The Japanese particularly were (and are) amazingly skilled at the craft, but the orgy of light came to a real climax at the 1937 Exhibition des Arts et Metiers in Paris. Illumination was one of the main themes of the exhibition, and no expense was spared to develop indirect light fixtures and special underwater fixtures to light up spectacular fountains. However, the piece de resistance consisted of the illumination of the Eiffel Tower under the direction of the architect Andre Granet. The huge space enveloped by the four slanted legs and the first platform was turned into a gigantic luminous vault-like space by means of over six miles of tubing of various specially designed colors. The whole installation weighed 45 tons, and produced a lighting level of 200 lux on the ground, enough to read a newspaper.

The lights went out rather abruptly in September 1939 when Hitler invaded Poland. "Neon's" first golden era had come to an end.

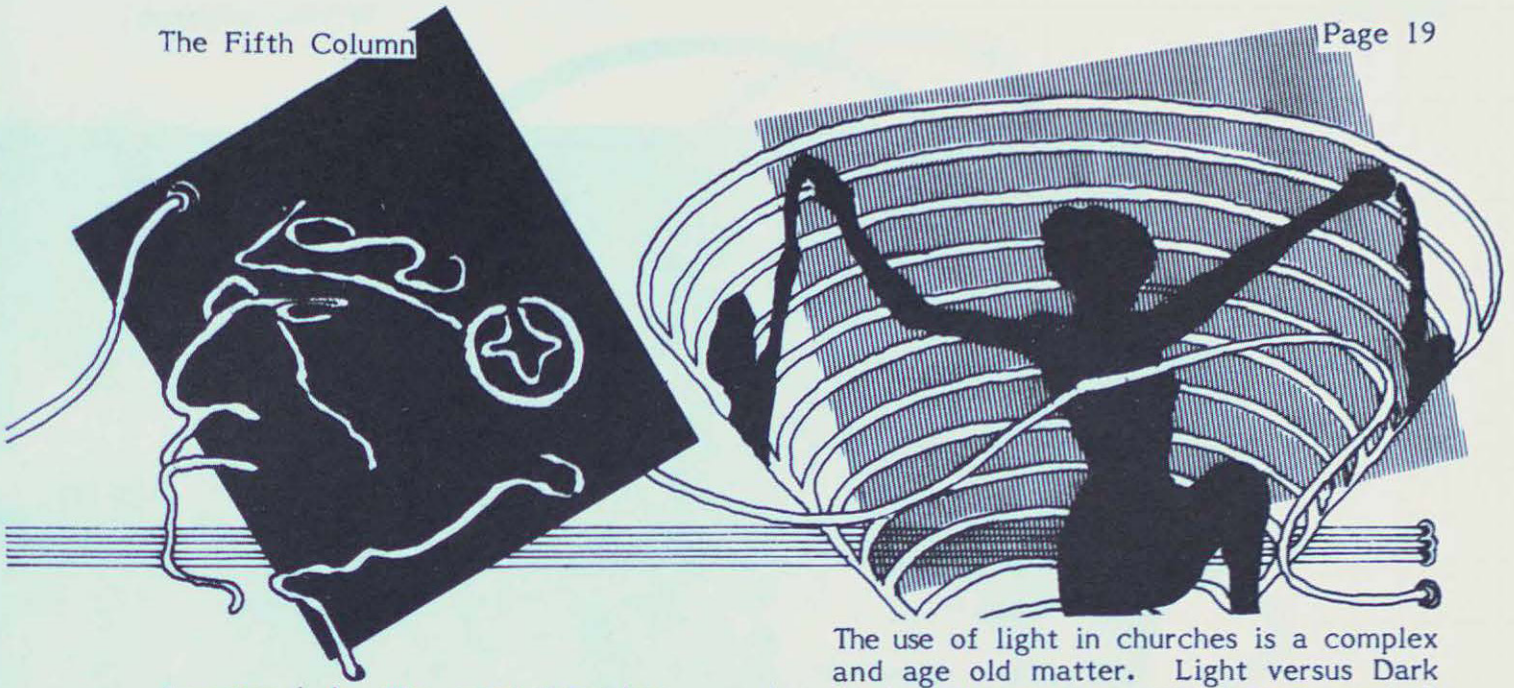
After the war, the serious business of rebuilding the world seemed more suitably served by standardized, mass produced hot cathode fluorescent tubes than by hand crafted high voltage cold cathode tubes. Architects had never shown much interest in the brash, powerful exuberant medium anyway. With the exception of Granet, the industrial designers such as Lowey and Teague, the field had largely been left to the sign makers in the land, a crafty, tough, unselfconscious bunch, not afraid of zoning authorities, beautification commissions, or anybody else who would interfere with their business.

Peter Blake's 1964 lament "God's Own Junk Yard" paints the scene very clearly: on the one hand the refined good guys wringing their hands at the defilement of the Great American outdoors, on the other hand the lobbying, bribing, philistines, who, under the banner "Freedom of Speech" erect gaudy billboards and neon-signs wherever there is room to stand.

The first author to paint a more favorable picture of the industry was Tom Wolfe, who, in 1965 wrote the Kandy Kolored Tangerine Flake Streamline Baby, a series of essays on the culture of low-culture: hot rod cars, Las Vegas, demolition derbies and the like.

"I call Las Vegas the Versailles of





America (...). The usual thing has happened of course, because it is prole (proletarian) it gets ignored, except on the most sensational level. Yet long after Las Vegas' influence as a gambling heaven has gone, Las Vegas' forms and symbols will be influencing American life. That fantastic skyline. Las Vegas' neon sculpture, its fantastic fifteen story high display signs, parabolas, boomerangs, rhomboids, trapezoids and all the rest of it are already the staple design of the American landscape outside the oldest parts of the oldest cities".

Tom Wolfe is rightfully credited by Venturi and Scott Brown as being part of "the intellectual and artistic underpinning" of the Yale Design studio in Las Vegas, which led in 1972 to the publication of "Learning from Las Vegas". This book together with "Complexity and Contradiction in Architecture" essentially takes another look at Blake's, or rather God's own junkyard. Whether Venturi's populist rhetoric is more elitist than the modern movement establishment is an interesting question, raised, amongst others, by Gutkind in "After the Planners".

Venturi did apply his new-found insights in, of all places, a church, using cold cathode tubing as his main design element.

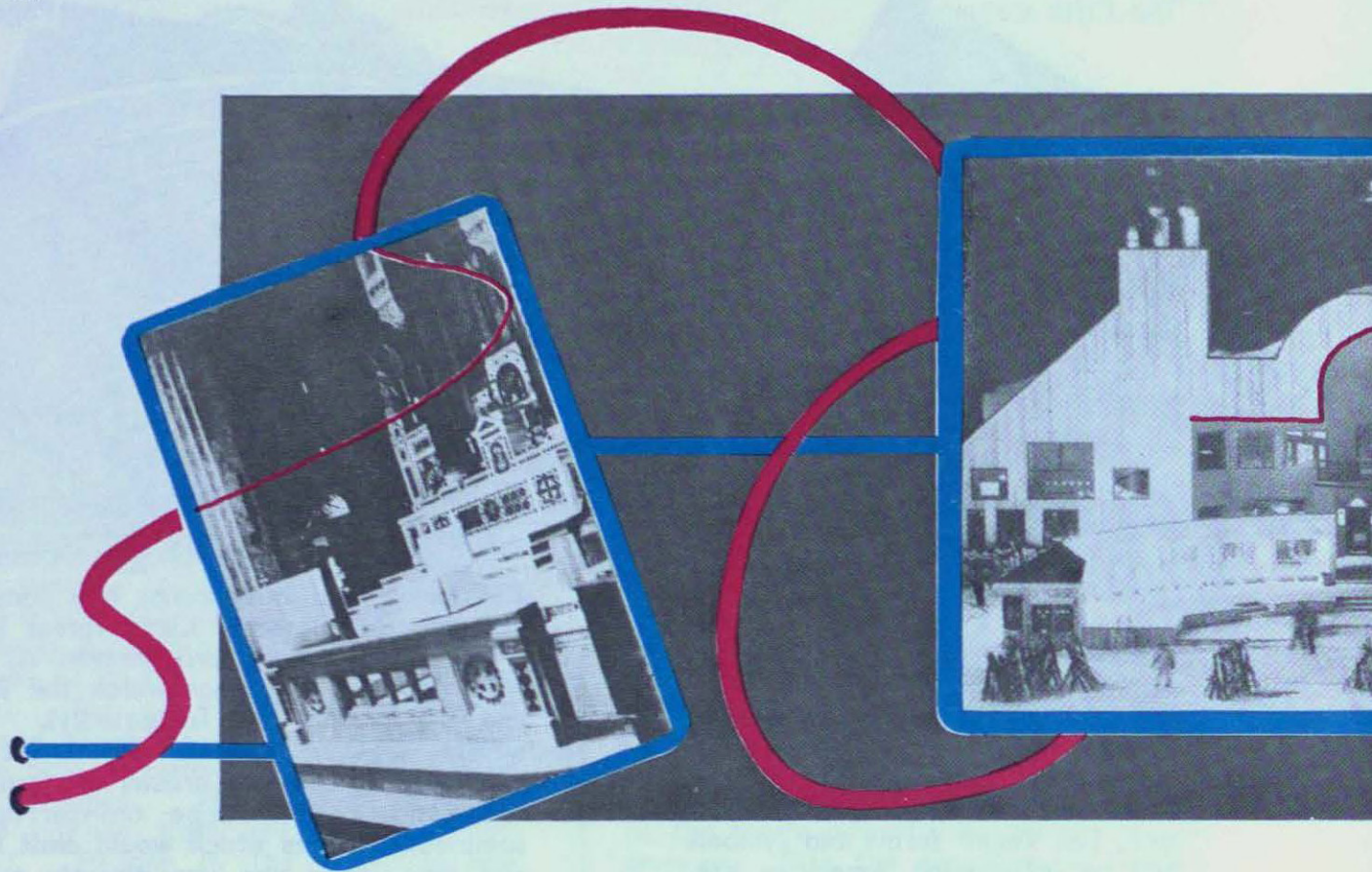
The use of light in churches is a complex and age old matter. Light versus Dark symbolizing good vs. evil, heaven vs. hell is a powerful metaphor which the Bible and the Church use (repeatedly). The whole Gothic system of structural acrobatics is centered around the issue of how to create large uninterrupted luminous surfaces which would **emit** light and thus strike the eye **directly** rather than **reflect** light in the way we normally see objects. Cold cathode tubing, which can emit any colour in any shape in any intensity essentially fulfills the Gothic design specifications. (It is interesting to note that correctly **both** stained glass making and neon craft are enjoying a renewed interest).

The real drawback of neon tube lighting is not the relatively high cost, nor the relatively high level of maintenance required, but the way people associate this type of illumination with gas stations, moviehouses and bars.

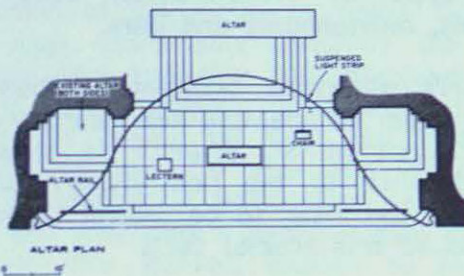
Venturi's otherwise brilliant solution to the problem of adapting the sanctuary of the Church of St. Francis de Salis in Philadelphia to the new liturgy which required the altar to be moved forward, overlooked this crucial fact.

His daylight-coloured delicately suspended cold-cathode tube, subtly separated the old altar from the new one. Within six months, however, enough parishioners had objected to the intrusion of "neon" into their church that the system was taken





down, leaving the new white opaque plexiglass altar and the soft vinyl chair rather forlornly behind. A similar tube constructed in closely spaced incandescent bulbs or tubes, or even in sociologically untainted optic fibre would most likely not have a similar fate.

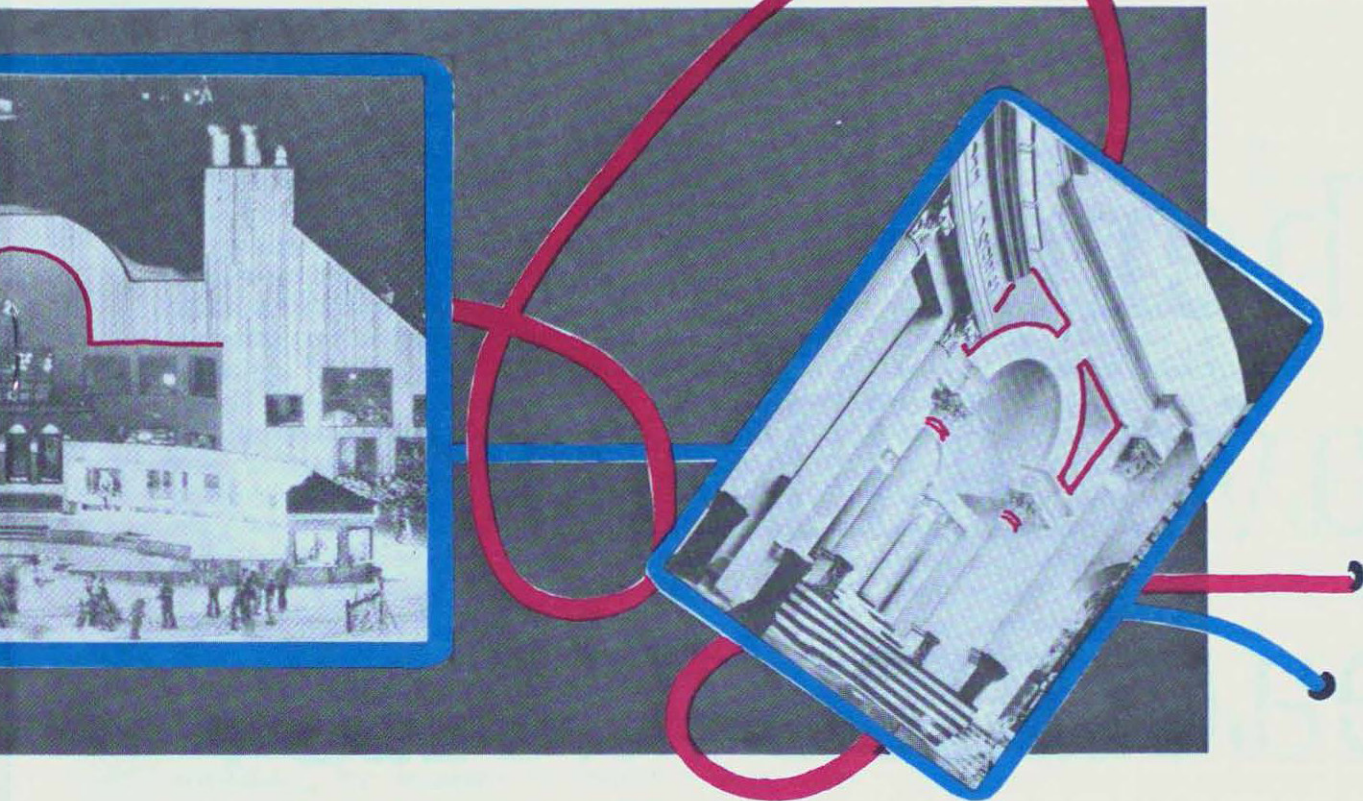


Churches have always been big "advertisers": high towers with brass bells weighing as much as eight tons certainly qualify as visual as well as audio advertising. It is not surprising then that

churches have used neon outdoors quite freely. The St. James Church on Ste. Catherine Street and the Salvation Army Citadel on Drummond Street both have gothic, artillery-shell-shaped neon signs, due to the combined influences of ecclesiastic imagery and Montreal by-laws. Several luminous crosses, amongst them St. Josephs Oratory, light up the sky. In California, many movie houses have been converted into churches, the only modification often consisting of removing the name of the cinema, and rearranging the movable type on the luminous marquee into the name of the church. In Mexico and Latin America, neon is used freely for the depiction of the Saints and the Virgin Mary.

I have elaborated on neon used by the Church because it illustrates succinctly the cultural variables which sometimes govern the creative use of the medium. In non-ecclesiastical buildings neon is still used sparsely by architects, with a few notable exceptions: Charles Moore's





Piazza d'Italia in New Orleans and Rose, Righter and Lancken's St. Sauveur ski center. In Moore's Piazza the lights delineate, give colour, illuminate, humour, and give a child-like sense of delight to a place that is exactly supposed to do just that. The neon used in the St. Sauveur ski center creates a delightful target for even the most inept skier to aim for, creates a festive mood, and helps create and sense of space and style in a building type which until recently outdid the fast food chains in dreariness.

Architects have to judge the new as well as the old. Steel, modern concrete, sheetglass, synthetics and of course electricity have all been brought into use and accepted in the last hundred years. At the same time brick, ceramics, stone and wood are still very much with us. The fact that the many opportunities which cold cathode tubing offers are finally being exploited by architects rather than being dismissed or villified is an encouraging sign. □

"Neon" is called cold-cathode lighting because the electrodes are not heated by a filament as is the case in standard fluorescent tubes.

#### References

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