



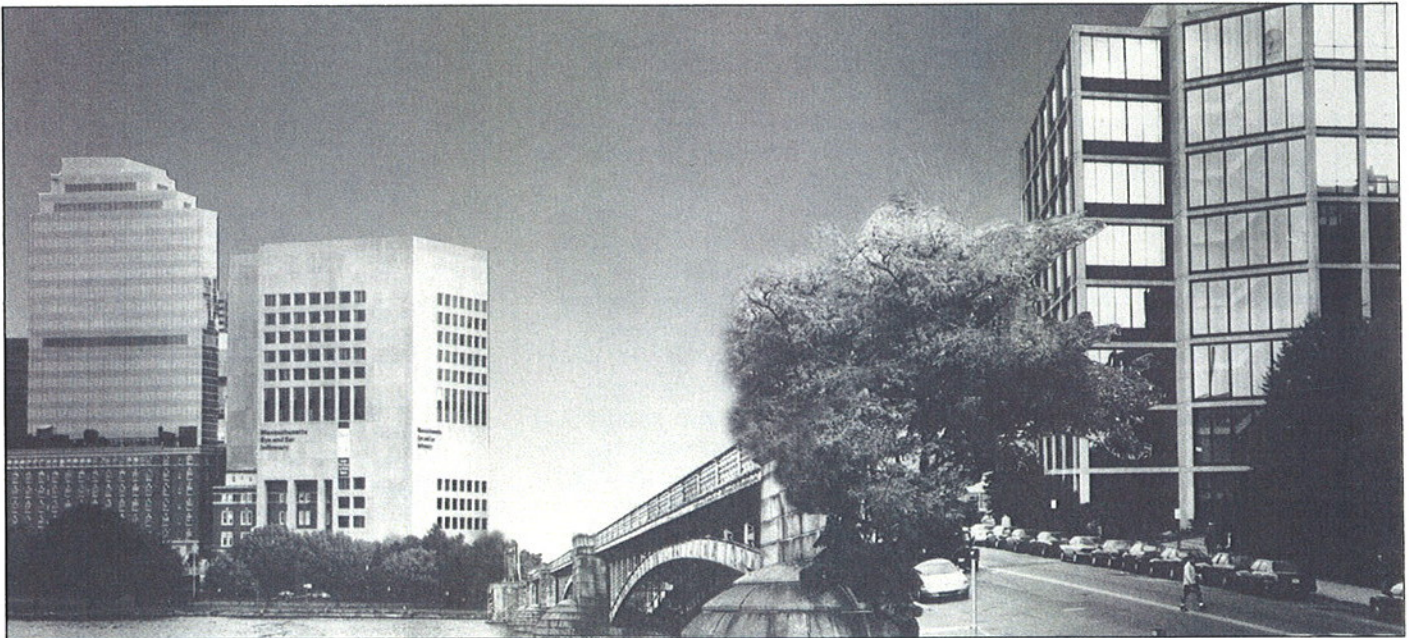
RLE

Currents

Volume 9, Number 2 • Fall 1997

The Research Laboratory of Electronics at the Massachusetts Institute of Technology

CROSSING THE BRIDGE TO BIOMEDICAL AND BIOENGINEERING RESEARCH



This imaginative photographic sleight of hand illustrates RLE's connection to biomedical and bioengineering interests at the Massachusetts Eye and Ear Infirmary and Massachusetts General Hospital across the Longfellow Bridge in Boston. RLE's innovative work in these fields is no illusion though. The laboratory's traditional multidisciplinary approach to electronics has contributed to beneficial collaborations with scientists and clinicians in a wide range of basic and applied research at other institutions. (Photo by John F. Cook)

Many people are surprised to learn that RLE brings together a wide range of activity in biomedical and bioengineering research. In the beginning, RLE's investigators focused on the physical phenomena of electronic devices in systems such as radar. These interests quickly expanded to coding and the representation of information, which led to a basic theoretical understanding of communication in human-made sys-

tems. Fueled by Professor Claude Shannon's classic papers on signals and noise, and by Professor Norbert Wiener's work on cybernetics and statistical theory, RLE's early investigations into the field of communication sciences was far ranging. It included information and communication theory in both humans and machines, and expanded into the biological sciences, which included the physiology and develop-

ment of the human nervous system. During the late 1940s and early 1950s in RLE, communication engineers, neurophysiologists, biologists, linguists, economists, social scientists, and psychologists attended lively dinner discussions arranged by Professor Wiener.

During the 1950s, innovative collaborations with Massachusetts General Hospital (MGH) and the Massachusetts

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