RLE
undercurrents
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A Newsletter for the RLE Community at MIT

A Last, Loving Look at an MIT Landmark -- Building 20

It was a new beginning: World War II was over; the RadLab was closing; and the Basic Research Division, which would later become RLE, was just established. Professor George Harvey, later RLE's first associate director and security officer, went through the RadLab equipment, tagging items to save for RLE and the Laboratory for Nuclear Science (LNS). Building 20 hummed with new life, with RLE headquarters moving into the A wing, and LNS and other groups moving into the other wings.

Life in Building 20 was homey with a family-like atmosphere. Any excuse would serve for having a party. People ignored the shabbiness and dirt because the atmosphere encouraged creativity and the exchange of ideas. The building was the only one on campus with its own lunchroom. Two friendly Cambridge ladies served hot dogs, hamburgers, beverages, sandwiches, and desserts. Other conveniences were a machine shop, chemistry shop, glass-blowing shop, tube lab, library, and publications office.

This issue of ***undercurrents*** contains excerpts from reminiscences of some members of the RLE community and photos showing the poetic nature of the building. In interviewing many of the people who worked and studied here, we were impressed with the fondness pervading their memories. In honor of this venerable building, which is slated for demolition in the summer of 1998, MIT is planning a celebration on March 26 and 27, 1998. For more information about the event, contact Ms.Vera Sayzew, EECS Department, Room 38-401, x3-4624.

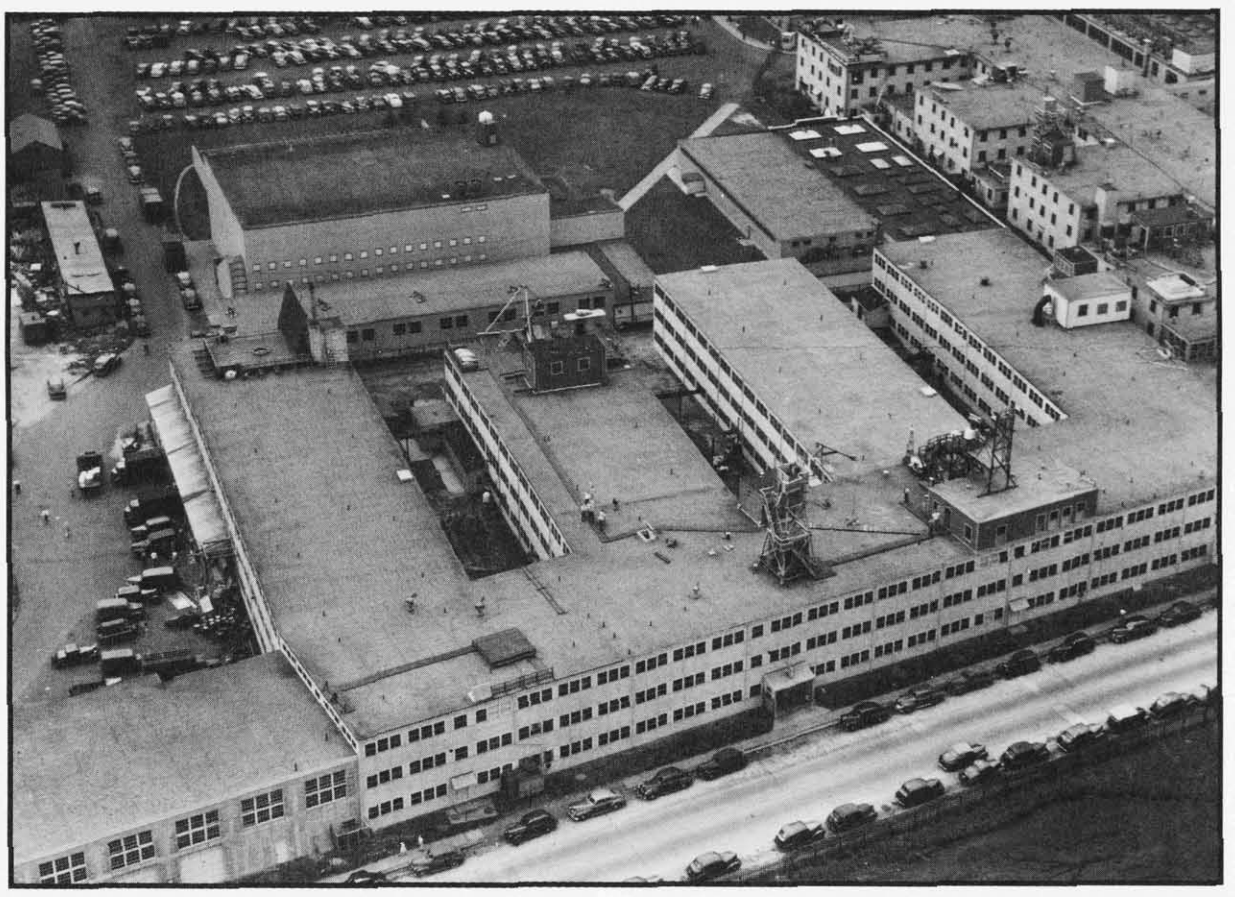
Our thanks to all who contributed their time and memories, and our special thanks to John F. Cook, whose photographs of the building form the centerpiece of this issue. All photos shown here except the 1945 view of Building 20 below are his. For the full text of each reminiscence, see RLE's Building 20 web page: http://rleweb.mit.edu/bld20rem.htm.

I first arrived at MIT as a graduate student in 1958. I joined the Communications Biophysics group under Professor Walter Rosenblith on the top floor of the B wing of Building 20. Building 20 was dirty, dingy, and had dark corridors, but the windows opened. The place had a worn-in look, and it felt homey. The partitions were easily moved around the post-and-beam frame, so each group could fashion the structure of its space around its own needs. Some of the lucky groups on the top floor, where I was, had air conditioning to get through the summer.

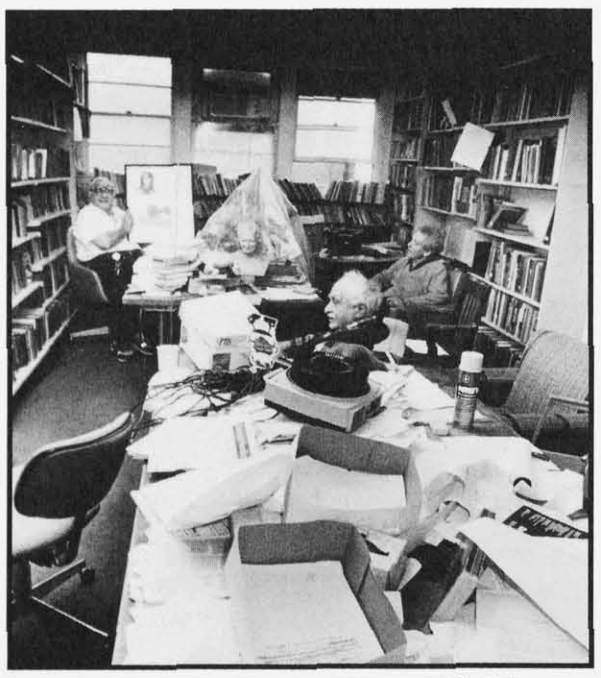
After six years away at Bell Telephone Labs, I returned in 1967. During the time I was away, computers began to appear in many of the labs. We had two DEC PDP-9 computers and a Teletype link to the CTSS time-sharing system, all on the top floor of Building 20. Cooling the computers presented some problems, and they had to be vacuumed regularly because of the dust.

When it was time to move in 1973, my research group didn't want to go, despite the lure of a new, air-conditioned building. Eventually, we all moved to Building 36, and we've been here ever since. I still often go to Building 20, and it feels good—a no-nonsense researcher's workplace that we all loved.

Dr. Jonathan Allen, Director, RLE



For release August 14, 1945. *Radar Center will close down. Radiation Laboratory, MIT, Cambridge, Mass., world's largest scientific institution of its kind, announced the "beginning of the end" for war research that lasted almost five years and was conducted in utmost secrecy. Radar devices developed here have had decisive effect in war and introduce principles that will have scores of peacetime uses. (photo/caption: MIT Museum)*



From left: Professor Emeritus Jerome Y. Lettvin, Professor Emeritus Louis D. Smullin, and Visiting Scientist Gad Geiger in Professor Lettvin's Building 20 office.

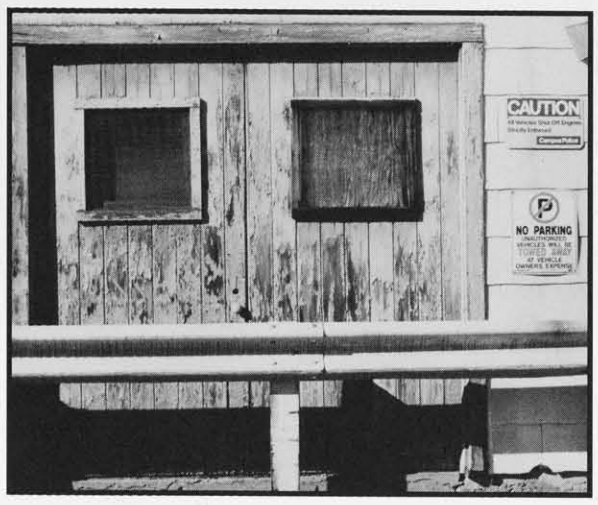
It all happened in a rush at the RadLab: V-E Convocation in early May 1945 with the message that that we were to plan for the end. Then the V-J Convocation on August 14, 1945 saying an orderly closing was starting. I was given the job of educating *Life* magazine and photographer Fritz Goro about microwaves for a picture essay to appear on November 19, 1945. I set up a studio in Wing E of Building 20. Photographer Ben Diver developed endless rolls of films. That ended October 6. Later that fall, J.C. Slater, I, and others came in one Saturday and covertly expropriated desks, work benches, electrical apparatus, etc., and moved them across the second floor connection from Building 22, before it was sealed off for termination work for Radiation Laboratory. I claimed 20A-214 to the end of the wing; the end of the wing had been Vic Neher's klystron tube laboratory and was the only space that rated an air conditioner. When Radiation Laboratory terminated at the end of 1945, it was continued on as Basic Research in the space and with the equipment we took that weekend.

Professor Emeritus Malcom W.P. Strandberg

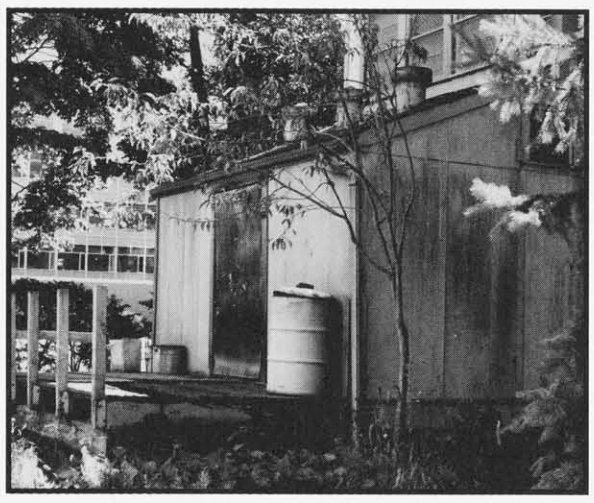
I watched the construction of Building 20 from my office in Building 22 (where Building 26 now stands). It was the middle of World War II. A, B, C wings went up together, and amazingly fast. You know those time-lapse pictures of building construction? It was almost like that in real time. Men would be starting nails in floor boards; behind them men with sledge hammers would drive the nails with one blow; behind them would be more men bringing up posts for the next floor.

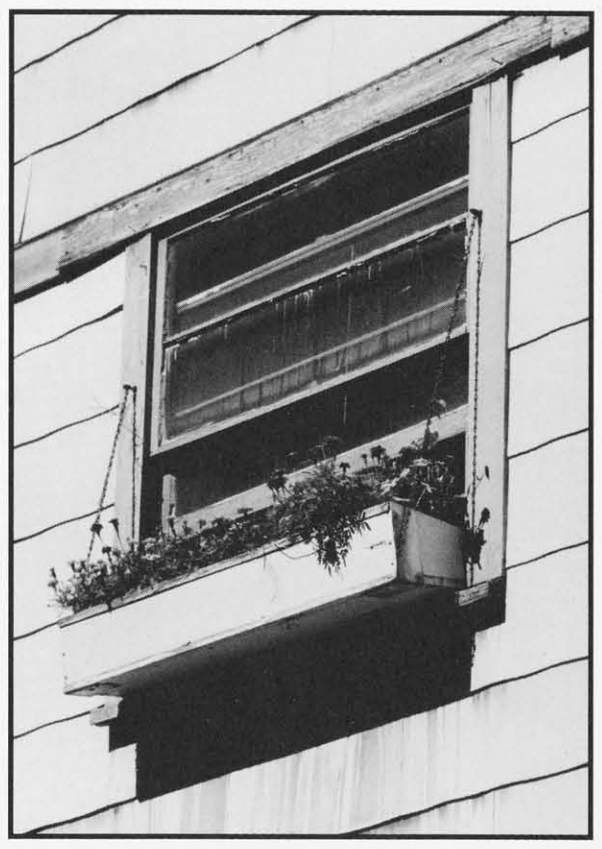
E wing was different. They tried to build it in midwinter. They came with a steam shovel and trucks to excavate for the foundation pad. But the steam shovel could only make scraping noises on the frozen ground, so that afternoon they came back with a wrecking ball. They used the steam shovel to drop the ball on the hard ground. I could feel the earth shake while I stood at Mass. Ave., but the ground held. The next day they brought an air compressor and jackhammers, and they excavated the site. The concrete was to be poured the following day, but that night there was a heavy snowfall. They waited until spring.

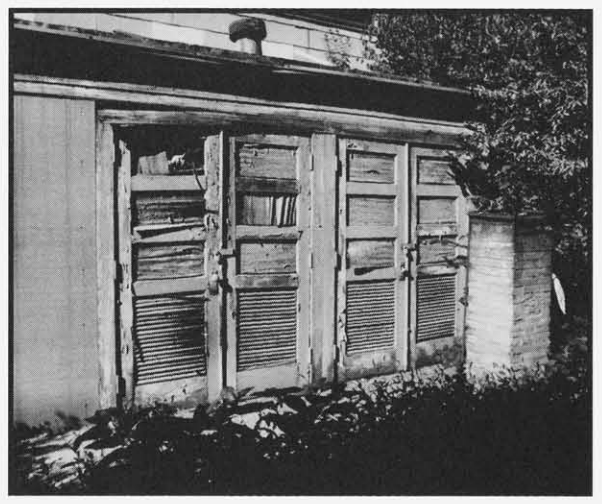
Professor Emeritus Robert L. Kyhl



The Magic of Building 20 is the theme of a two-day on-campus event which will take place on Thursday and Friday, March 26 and 27, 1998. The program, sponsored by EECS, will pay tribute to the glory and traditions of this venerable old structure and will include oral presentations, exhibits, tours, and an evening gala.







RLE *undercurrents*

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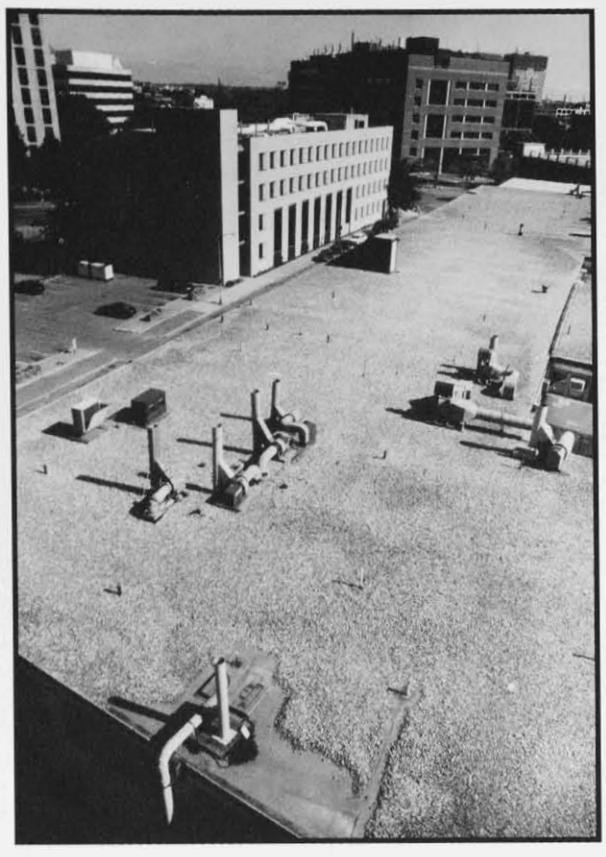
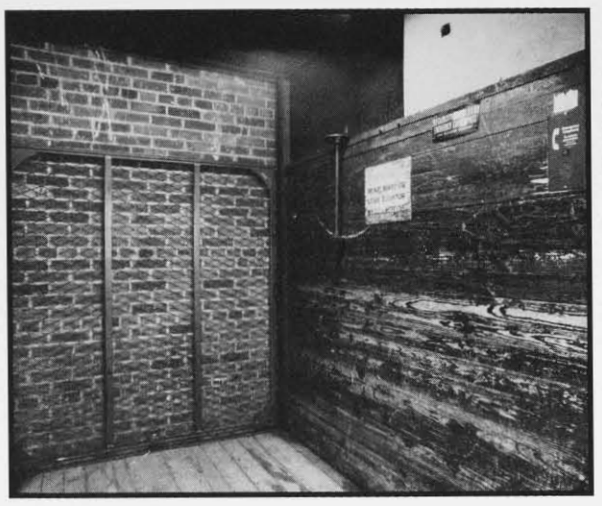
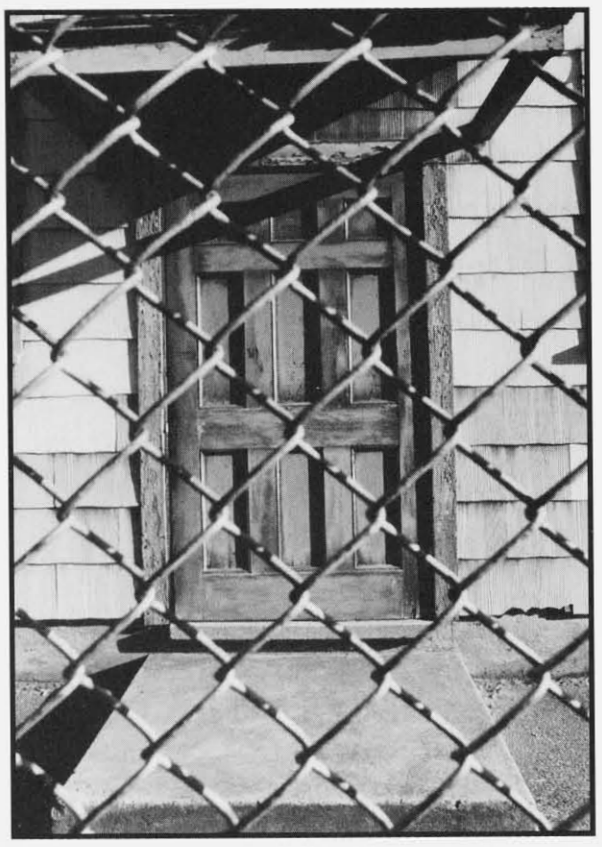
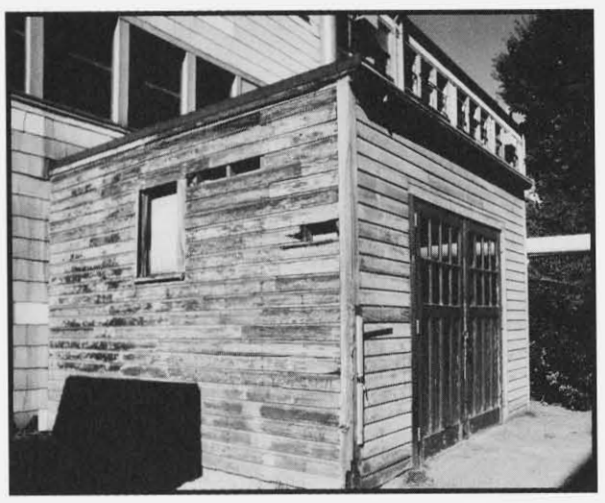
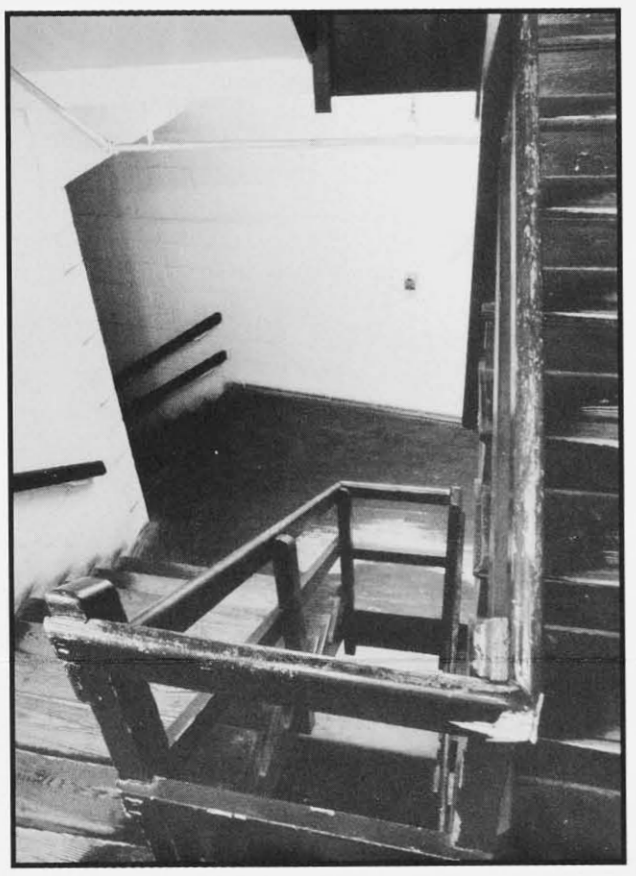




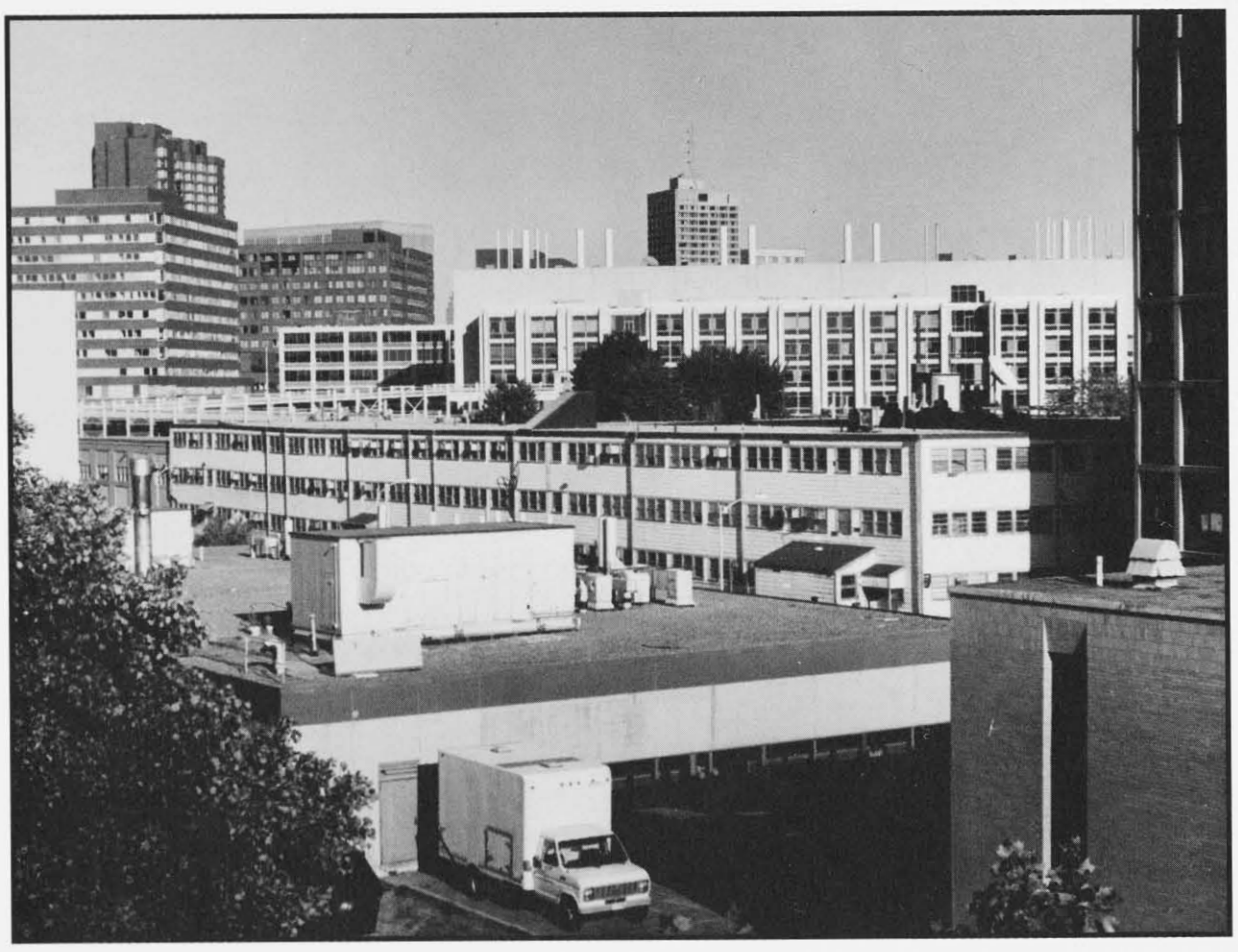


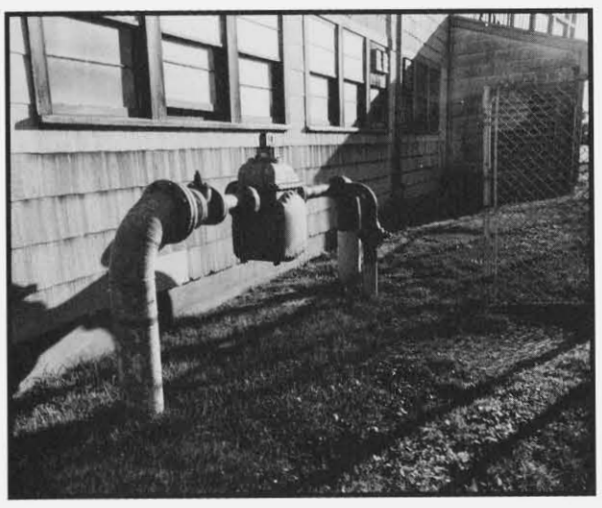


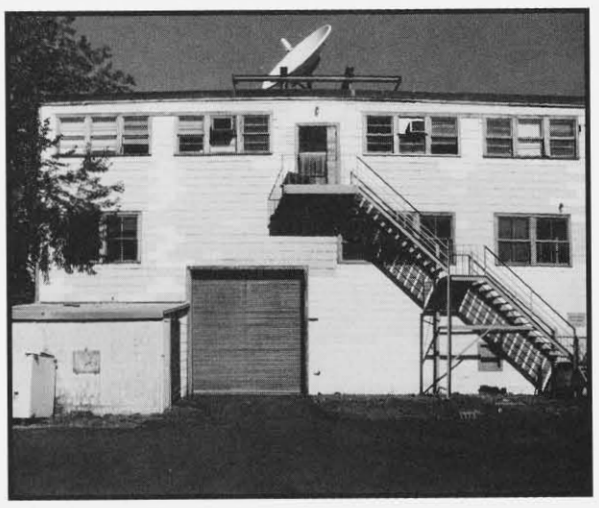


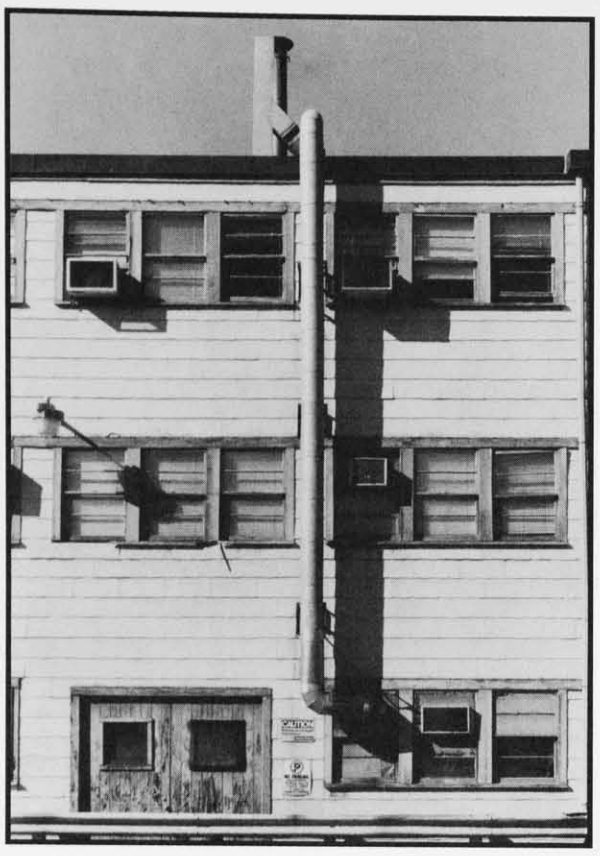
'A Building with Soul'

(Alex Beam, *Boston Globe*, June 29, 1988)









A friendly place for bumping into friends and strangers was in the intersecting wings and blind corners in Building 20. Vending machines were in A wing, and one of my responsibilities was to give change to customers. Between 11:15 AM and 1 PM, I got to meet a lot of Building 20 people, and, as vending machines were almost unique to MIT and to Building 20, I met lots of people from other parts of the Institute. It made no difference who was in line, no one cut in. I soon found out that the director of RLE, Jerome Wiesner, later to become special assistant to President John F. Kennedy and still later president of MIT, waited patiently in line for change like everyone else. The equality displayed there was a great introduction to the Institute.

Elaine (Geller) Cook (retired)

The nature of Building 20 has nothing to do with its shabbiness. It's a building with a special spirit, a spirit that inspires creativity and the development of new ideas. From its inception, Building 20 was meant to be a place where different disciplines could co-exist, and many pursued wild ideas. New projects that seemed to have no practical application started up here. Building 20 was the nest in which new notions could be fledged. Under the benign guidance of RLE administrators, there was always support for the development of new projects.

Professor Emeritus Jerome Y. Lettvin

Dr. Helen Thomas, who recently passed away, was, for many years, in charge of the Publications Office, an interesting suite located in A wing. With a staff of 16 or so highly educated women, Dr. Thomas ran the office very efficiently; I felt that I was visiting the highest editorial authority when I visited. The *Quarterly Progress Report* (QPR) in those days was a giant deal, with the whole thing typed from scratch and subject to multiple editorial reviews. Requests to report to the Publications Office to review proofs for the *QPR* were command performances. In addition to editing the *QPR,* Dr. Thomas and her predecessor Miriam Smythe provided writing assistance to researchers preparing papers. I felt their efforts always improved the communication in my manuscripts.

Professor William T. Peake

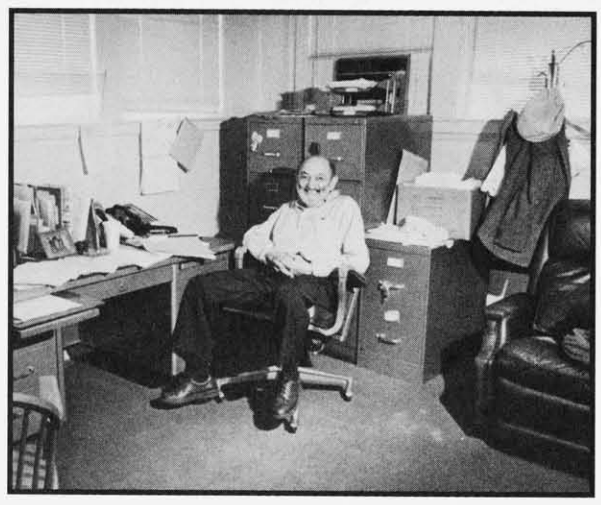
When I came back from the service in 1946, I began working in RLE's Radar Communications group on Project Meteor, a project to develop guided missiles. In the beginning, there were approximately 15 engineers, technicians, and graduate students in Building 20 working under the direction of Professor Henry J. Zimmermann. We worked on the first floor of A wing, then when the project was designated confidential we moved to Building 22, then back to Building 20, where we occupied many different spaces at various times. We attached radar antennas to the 20-foot-high towers on the roof leftover from the RadLab. In the mid- to late-1950s, we moved to Building 26, continuing to use the shops in Building 20.

D. Cosmo Papa (retired)

A key figure at that time was Ralph Sayers. He was the administrative officer at the time, and as such he was the business manager. He was really needed there: he was someone with his feet on the ground. Sayers loved his work. His attitude as the chief administrator was not to intrude, but to see to it that the researchers could do what they wanted to do. The reason for the success of the lab really was the administration's benign attitude toward research.

The war effort was concentrated in the Boston and Cambridge area. Building 20 housed the Radiation Lab, and modern electronics came out of that building. Building 20 ought to be made a national historic landmark or monument, or an MIT museum. It doesn't make sense to throw away all that history.

Professor Emeritus Nelson Y-S. Kiang



Professor Emeritus Morris Halle.

During the early years, before MIT had a graduate program in linguistics, my work focused mainly on speech acoustics. I very quickly learned a lot about it thanks to various colleagues. We would have dinner at various nearby restaurants, none of which was memorable for its cuisine, but which provided excellent settings for long discussions. These discussions would continue after dinner in Building 20, ranging from cybernetics and information theory to technical problems in circuit theory, and the grounding I received in those areas has stood me in good stead for the rest of my career.

There were no computer scientists in the 1950s, but there were many electrical engineers, psychologists, neurophysiologists, and linguists. One of my frequent discussion partners was Ken Stevens, who was then in the Acoustics lab, and some of our discussions have resulted in joint publications, with another planned for 1998.

Professor Emeritus Morris Halle

As RLE purchasing agent, I bought everything from dogs and mice to expensive computers. I purchased the supplies for the lunch room from Legal Cash Market in Inman Square. Legal Cash Market later became Legal Seafoods.

Early on, Building 20 had old-fashioned windows that were complicated to open and close. On hot days when we opened the windows, soot came in and covered everything.

Richard V. Keyes, Jr. (retired)

Building 20 had a friendly atmosphere in spite of the physical environment. It took a while to get used to it, but then it felt comfortable, kind of like an old shoe. I remember one time we were sitting around a table and a big lighting fixture fell from the ceiling onto the table. Since we were in Building 20, no one was surprised, and fortunately no one was hurt.

Dr. Joseph S. Perkell

When I first saw Building 20, I was, of course, devastated. I had come from a United Nations skyscraper in Addis Ababa and had thought that most of the United States was like downtown Manhattan! But I got to love Building 20. It had a personality all its own: the creaky wooden floors, the leaky windows, the sprinklers that went off whether there was a fire or not, and there was so much scope for interior decoration: I remember painting each pipe a different color! When we moved to brand-new Building 36, I hated the shiny floors and touch-me-not walls.

Neena Lyall, Laboratory for Computer Science

I came to MIT's Acoustics Lab in September of 1948 as a graduate student doing research in speech. MIT was the premier place to study acoustics, and that lab turned out many famous people. Several new fields in acoustics were developing at the time, particularly relating to noise control, which had become important since the development of the jet engine. The research covered everything from speech to architectural acoustics to noise control, and all were grounded in mathematical theories of sound. In 1955, the Acoustics Lab ceased to exist, and RLE Director Jerome Wiesner granted my request to incorporate my research in speech communication into RLE.

Professor Kenneth N. Stevens

Room 20A-201 was "home" to Professor Yuk Wing Lee's electronic correlator group. Henry Singleton was working on a digital correlator, and my work was an analog instrument. It was here that I learned to appreciate the value and meaning of "military specifications." In the wintertime, my gear would never work much before 11 AM or so, until the heat came up and stabilized the room temperature. What drafts blew through those windows!

Professor Emeritus Frank Reintjes

As a graduate student in the early 1960s, John MacDonald, Tom Kincaid, and I worked with Manuel Cerillo in Building 20. Cerillo's interests were in mathematical theories of art and music, and his lab had a surreal aura about it. At one point, Jerry Lettvin and Walter Pitts spent many long sessions with Cerillo with the eventual goal of explaining his theories at an RLE colloquium. Sessions typically began around 11 PM and lasted until 3 or 4 in the morning. They would typically sit at a conference table, while we graduate students would sit in the background and listen in. On the table was a plaster hand with lines drawn to indicate the artistic flow of a hand. This, along with dim lights, stream of consciousness conversation, strange and exotic pictures on the walls, candles, and other artifacts associated with the research all combined to lend an air of mystery and intrigue.

Professor Alan V. Oppenheim

In the mid- and late-1960s, there was a great deal of student protest activity. Building 20 became a focal point of protest because it housed the campus ROTC. There was concern that the student radicals would burn down the building. The solution that was proposed was based on the assumption that if there were faculty in the building at all times the students would not burn it down. I'm not sure of the validity of that assumption, but faculty members did stand guard duty in the building at all times. So I stood guard for my shift, like everyone else. The building remained unharmed.

One of the many characters, Norbert Wiener could be seen wandering the halls, his head tipped back, peering out of the bottoms of his thick coke-bottle glasses, eating peanuts, (in winter) wearing a Maine trapper's cap with ear flaps down, with his index finger extended at his side to prevent him from banging into the walls of the corridor. He was a marvelous sight.

Professor Thomas F. Weiss

Ever since it was built, Building 20 was thought to be a firetrap, so it was heavily protected by sprinklers with enormous water capacity, so much that there was more danger of drowning than there was from the fire.

The building housed a model railroad club which was the site of some trouble when one of the transformers was left on and caught fire. Many fireman arrived, and I followed the hoses in. All the while, the people in the lab were completely unaware.

The Biology group was studying nerves by investigating the giant axon of the squid. They had a number of live squid, from which they would remove the nerve, discarding the carcass in a tank. One hot summer weekend, one of these carcasses was left out, and the whole place stank of dead squid. Terrible smell.

Professor Emeritus Louis D. Smullin