

Memories From the SEAS Time Capsules

The Eleventh Decade: 1965-1974



COLUMBIA | ENGINEERING

The Fu Foundation School of Engineering and Applied Science

1864-2014

From the SEAS Time Capsules

The Eleventh Decade: 1965-1974



- 1965 – Opening of the CBS Building, which uses Prof. Mario Salvadori’s structural system of thin concrete shells.
- Later, in 1975, responding to a call for volunteers in the New York City public schools, Prof. Salvadori teaches a junior high school class in Harlem.



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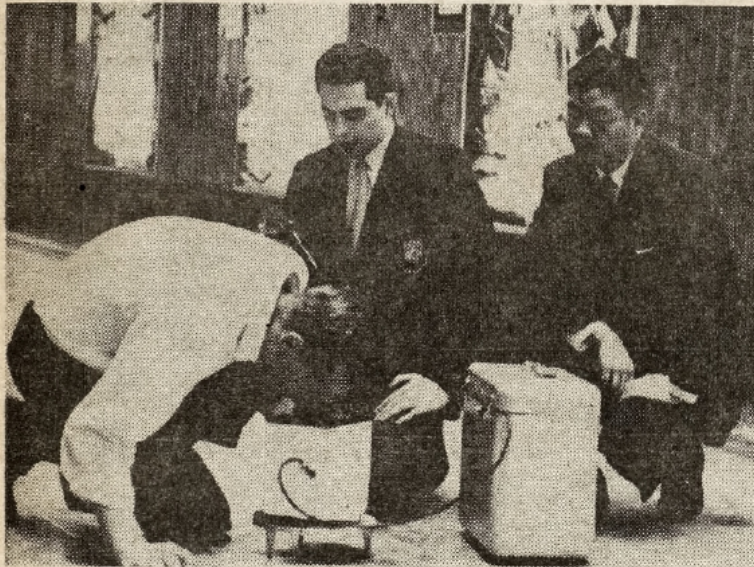
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The Eleventh Decade: 1965-1974

Gravity Read on 102 Floors



DON'T ROCK THE BOAT: Dr. John T. F. Kuo is shown checking a special gravimeter in the lobby of the Empire State Building with Bruce C. Auld and Mario Gutierrez, graduate students in the School of Engineering and Applied Science.

- As reported in the March 15, 1965 *Spectator*, Columbia engineers measure the gravitational acceleration on each floor of the Empire State Building, throughout the night and on Sundays to avoid vibrations by elevators during the traditional work hours, to contribute to fundamental understanding of the Earth's gravitational field.

New York Moments

The Eleventh Decade: 1965-1974



- March 22-26, 1965 – The annual international IEEE show occurs in the New York Coliseum, with 60,000 visitors and 900 exhibitors.
- In 1962, the IRE (Institute for Radio Engineers) had combined with the American Institute of Electrical Engineers (IEE) to become the IEEE, the Institute for Electrical and Electronic Engineers. Their annual convention is held at the New York Coliseum, which was at Columbus Circle from 1956 to 2000.



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The Eleventh Decade: 1965-1974

THE AMERICAN YOUTH FESTIVAL COMMITTEE
Presents A
VILLAGE GATE FOLK CONCERT
with
★ JUDY COLLINS ★ BARBARA DANE ★
FRANK FLETCHER ★ PHIL OCHS ★ THE PENNYWHISTLERS
★ BERNICE REAGON ★ JERRY SILVERMAN ★
SUNDAY AFTERNOON, APRIL 11th, 2 P.M.
THE VILLAGE GATE, Cor. Bleecker & Thompson
Contribution: \$3.50, 5.00 :-: Students \$2.50
Tix at door or by mail from AYFC office, 104 5th Ave., 691-4386 or at
the Folklore Center, 321 6th Ave.

- Ads in the *Spectator*, April 8, 1965, reflecting student life.

TONIGHT! APRIL 8.
IMPORTANT DEBATE
UNIV. of the PHILIPPINES (Aff.) vs. COLUMBIA (Neg.)
"That the U.S. should withdraw from Vietnam"
Judged by HON. PRIVADO JIMENEZ,
PROF. WM. THEODORE de BARY
DEAN ROBERT PINCKERT
Harkness Theater, Butler Library 8:30 P.M.
Admission Free
TONIGHT! APRIL 8.

Forlini's Alley
ENTRANCE: IIIth St. and Broadway
Back By Popular Demand
THE ALLEY CATS
OPENING THURSDAY
FRI. & SAT.
Dancing
DISCOTHEQUE
Every Night
RI 9-0200
COLUMBIA'S ONLY NITE SPOT



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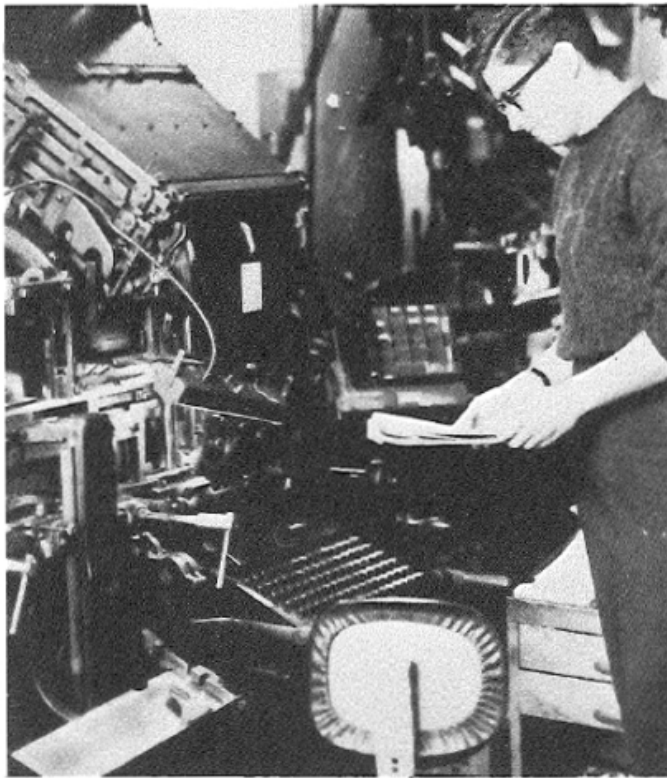
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Steve Brueck, co-editor of PULSE, prepares an issue late into the night at the newspaper's printer.



- From the 1965 *Columbia Engineer* yearbook.

PULSE

Over the past seven years, the PULSE, formerly the Engineering Newsletter, has been rapidly growing and expanding its coverage of the School of Engineering and Applied Science. In 1964 the major departures from past traditions were a reorientation of its past political and campus coverage, an increase in articles concerning Dean's office pronouncements and technological advances in campus laboratories.



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New York Moments

The Eleventh Decade: 1965-1974



- At about 5:30 PM on November 9, 1965, “The Northeast blackout of 1965” leaves 30 million people over 80,000 square miles in parts of New York, Northeast U.S. and Ontario without electricity for up to 13 hours.
- New York City is hit hard by this blackout (photo by Bob Gomel for *Life*). More than 800,000 riders are trapped in the subways and many others in elevators.
- Of note:
 - The 1965 blackout is relatively peaceful, unlike the later July 13-14, 1977 blackout which was marked by widespread looting.
 - The August 14, 2003 blackout has even greater impact, affecting 50 million people.
 - ... but it was the 1965 blackout that first raised awareness of the vulnerability of the City to large-scale power failure.



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The Eleventh Decade: 1965-1974



- Student electronics laboratory, photo from the 1966 *Columbia Engineer* yearbook.

From the SEAS Time Capsules

The Eleventh Decade: 1965-1974



Engineering School Drops Compulsory Camp Attendance

*Faculty Decision Takes
Effect This Summer*

Engineers Will Attend Summer Camp This Year

- Summer, 1966 – Camp Columbia ends (per the March 15, 1966 *Spectator*).
 - Faculty abolish this month-long requirement for the summer before the junior year as a requirement for the B.S. Degree.
 - Shown, the tower at Camp Columbia, photo from the 1958 *Columbia Engineer* yearbook.
- February 1968 – Faculty vote to reinstate Camp Columbia requirement for all SEAS students (per the Feb. 22, 1968, *Spectator*).
 - As reported by *Spectator*: As another faculty member stated: "Without Camp, the Columbia Engineering school is just like any other technical school in the nation. It is the experience at Camp that makes a Columbia education unique."
- ... but Camp Columbia is never reinstated.



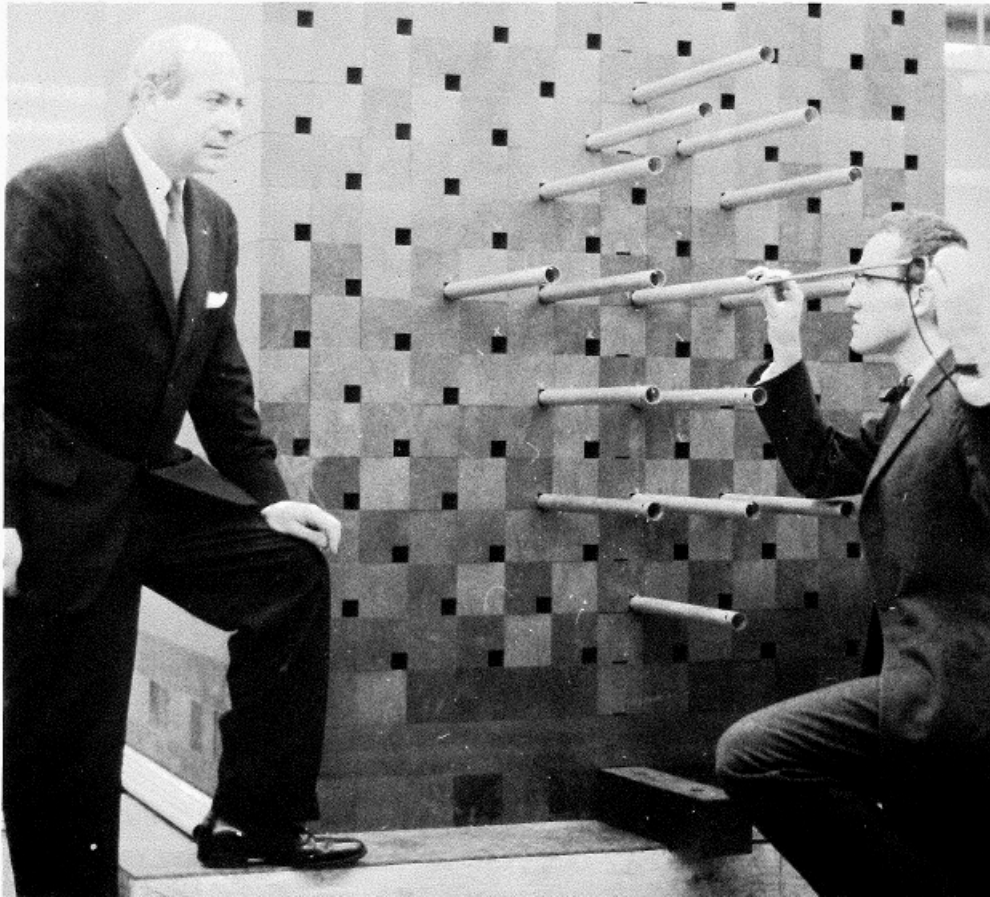
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The Eleventh Decade: 1965-1974



- One activity in nuclear science and engineering at Columbia is the use of the graphite-moderated subcritical assembly in the Nuclear Techniques Laboratory, which is utilized by undergraduate and graduate students.
- Dean Dunning and Prof. Edward Leonard are shown with this assembly, from the 1966 *Columbia Engineer* yearbook.



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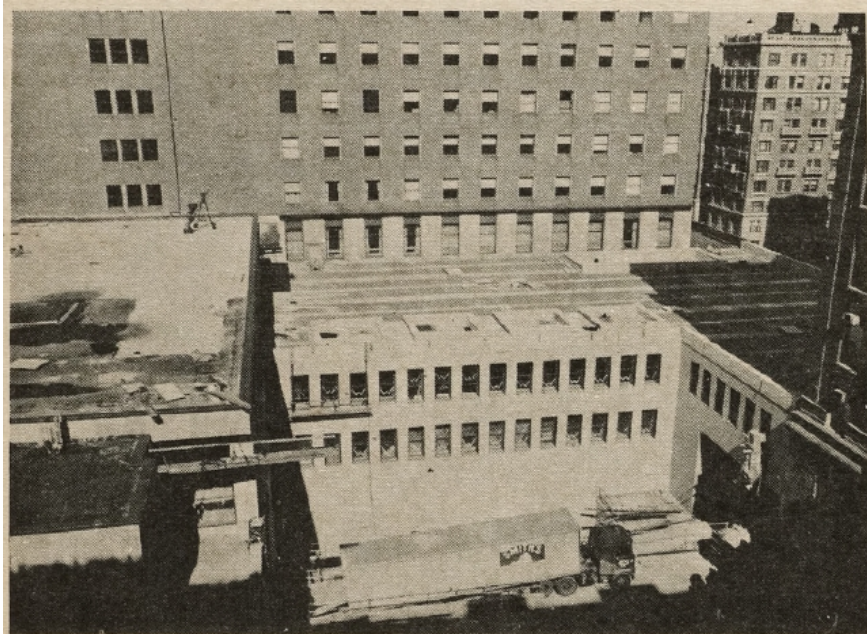
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The Eleventh Decade: 1965-1974

New Engineering Terrace Marks Campus Change

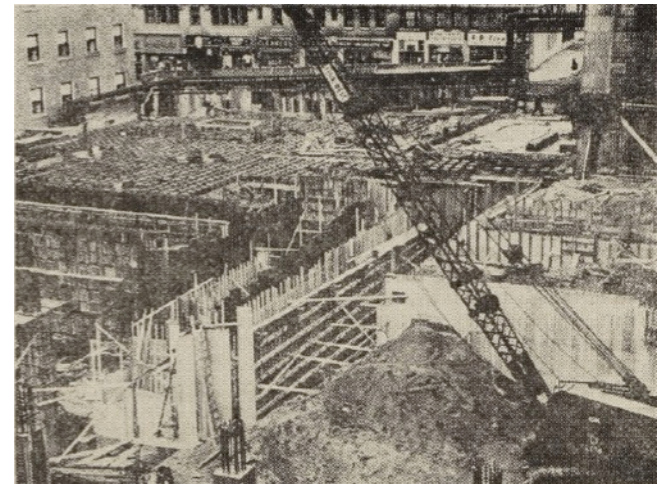


FLATTOP: The Engineering Terrace Building, seen from Schermerhorn Hall, as finishing touches were completed last month.

Newcomers to the Columbia campus who stroll casually to the south entrance of the Seeley W. Mudd Building will hardly realize that three scant years ago a gaping crevasse lay where they are now walking.

This is the Engineering Terrace Building, the second addition to the burgeoning Columbia Engineering Center on the northwest corner of the campus. Topped by a student lounge, the building houses the departments of chemical and mechanical engineering and Columbia's first nuclear reactor.

- Sept. 1966 - Engineering Terrace is completed, as reported in the Oct. 5, 1966 *Spectator*.
- Shown during construction, below, from the April 8, 1965 *Spectator*.



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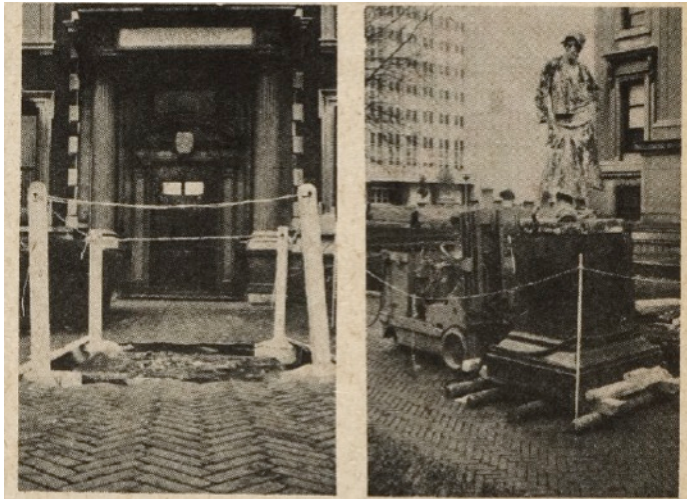
- Modernized libraries are important in SEAS education and research; photo from the 1966 *Columbia Engineer* yearbook.

From the SEAS Time Capsules

The Eleventh Decade: 1965-1974



- 1966, Le Marteleur ("The Hammerman"), a bronze cast of Belgian artist Constantin Meunier's 1886 sculpture that was a gift of the School of Mines Class of 1889, is shown being moved from outside Lewisohn Hall (which housed the School of Mines) to the Mudd Building (lower left photos from the Dec. 8, 1966 *Spectator*).
- The statue now sits near the entrance of Mudd (as shown below).



From the SEAS Time Capsules

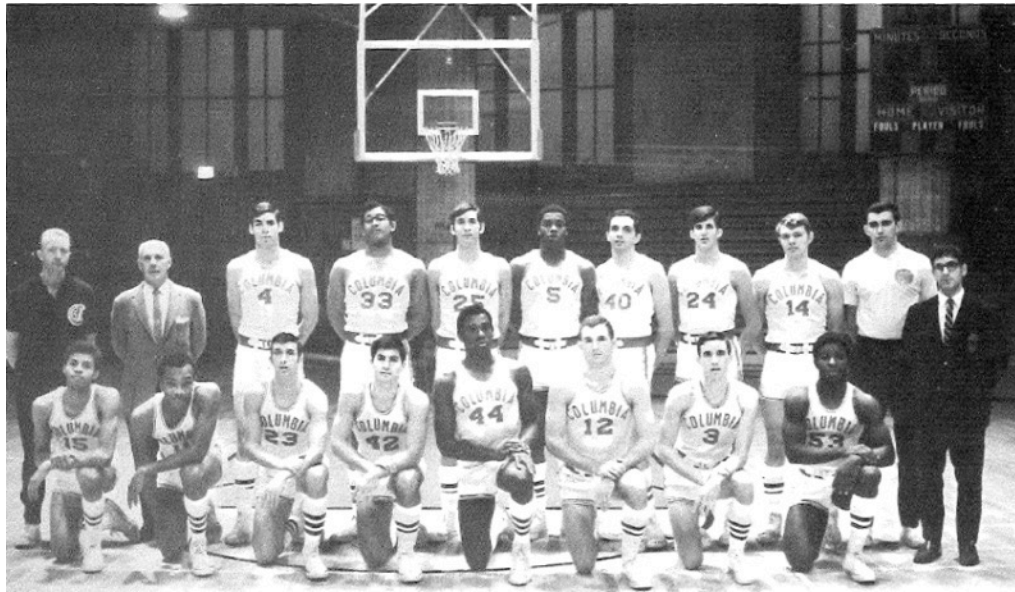
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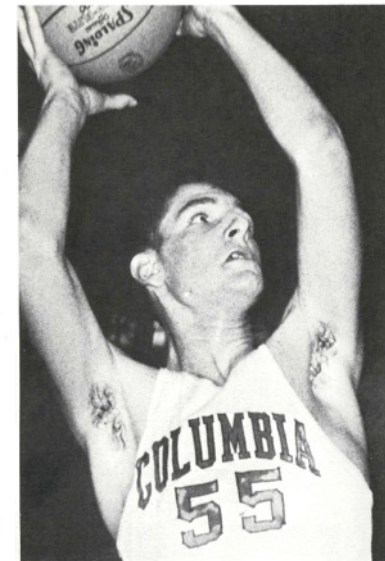
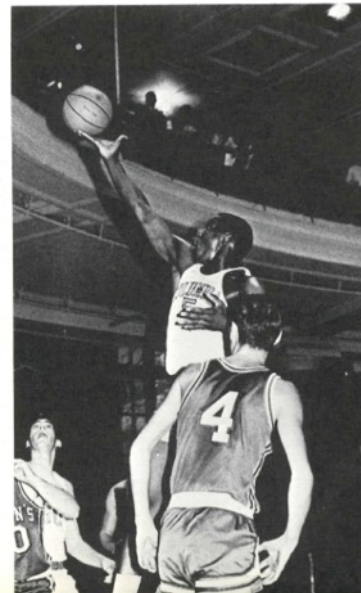
- Computer data center in operation; photo from the 1966 *Columbia Engineer* yearbook.

From the SEAS Time Capsules

The Eleventh Decade: 1965-1974



- From 1967-70, Jim McMillian leads the best ever (so far) Columbia basketball team to a 63-14 record.
- Dave Newmark co-leads the 1968 team to a 21-4 record and its last (so far) berth in the NCAA tournament.
- Both later play in the NBA.
- Shown, from the 1967 (below) and 1969 (left) *Columbia Engineer* yearbook.



Jim

Dave



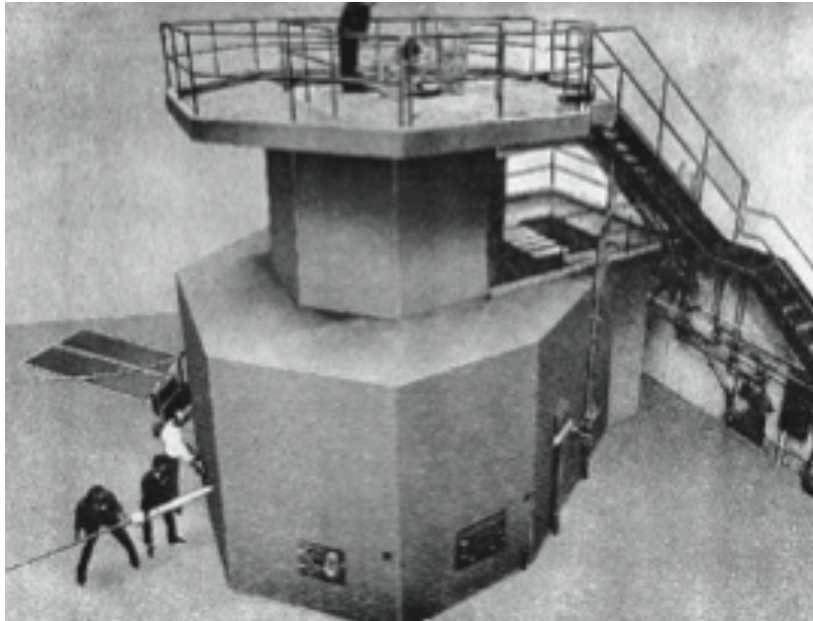
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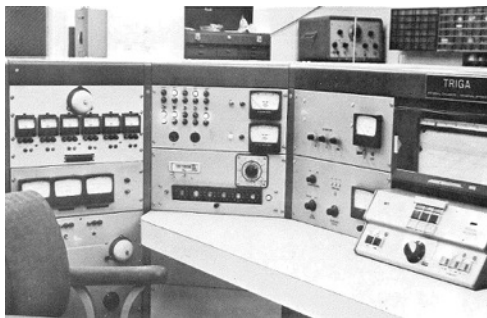
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From the SEAS Time Capsules

The Eleventh Decade: 1965-1974



- 1967 – Construction of the TRIGA Mark II fission reactor in the basement of Engineering Terrace, begun in 1964, is completed.
- It was to be used for education and research in the Division of Nuclear Science & Engineering, a forerunner of APAM.
- Though licensing and operation became possible in 1974 with the successful resolution of legal challenges, the reactor is never fueled, operated, or radioactive.
- The concrete shell of the nuclear reactor remains.
- The reactor control room, (lower) photo from the 1975 *Columbia Engineer* yearbook.



From the SEAS Time Capsules

The Eleventh Decade: 1965-1974



- Shown, Prof. James Church and chemical engineering students, from the 1967 *Columbia Engineer* yearbook.



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From the SEAS Time Capsules

The Eleventh Decade: 1965-1974



- Signs of the times: buttons from 1968-1972
- The button “Strike” with black ink on the lower half was issued for the April 26, 1968 strike held around the U.S. against the Vietnam War.

From the SEAS Time Capsules

The Eleventh Decade: 1965-1974



- Strike at Columbia, starting April, 1968.
- Photos show scenes on Low Library steps and confrontations among Columbia students.



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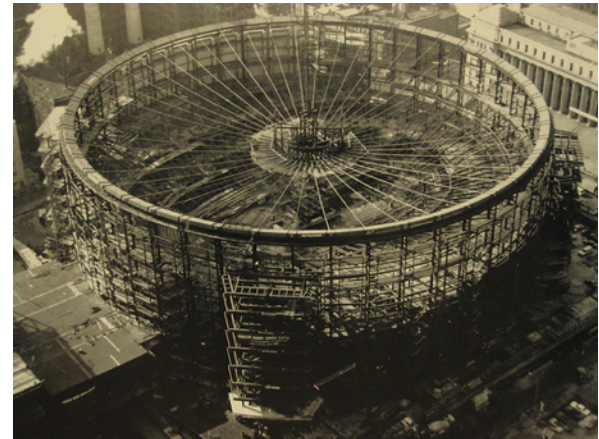
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New York Moments

The Eleventh Decade: 1965-1974

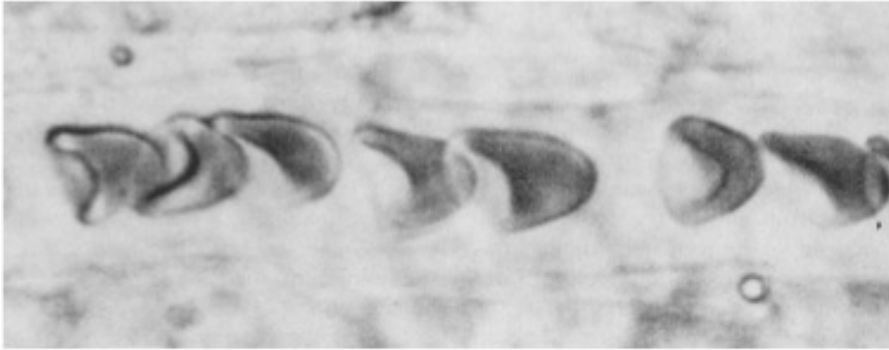


- The current (and fourth) Madison Square Garden (MSG) (below, under construction), atop Penn Station, opens in 1968.
- The first (1879-1890) (upper left, left) and second (1890-1925) (upper left, right) MSGs were at 26th St. and Madison Ave., and the third MSG (1925-1968) was on Eighth Ave. between 49th and 50th St. (lower left), shown in 1944.

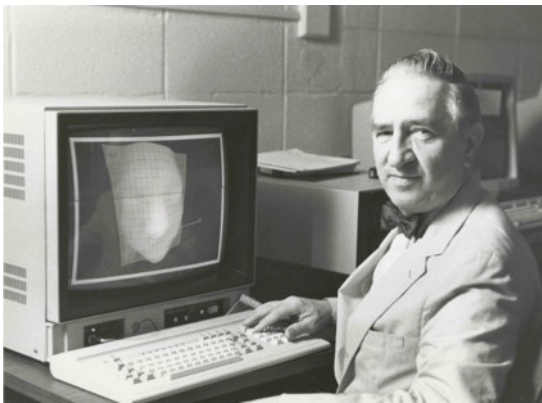


From the SEAS Time Capsules

The Eleventh Decade: 1965-1974



Red blood cells in vivo in a 7 micron diameter capillary.



Prof. Skalak is shown with an example of a three-dimensional computer image.

- Prof. Richard Skalak's 1969 *Science* paper on "Deformation of Red Blood Cells (RBCs) in Capillaries" was a major breakthrough.
- Using synchronized flashes, he showed that the parachute- or umbrella-like RBCs are the basic biconcave disk shape of the RBC with the upstream end flattened by the pressure gradient, and not, as earlier thought, due to internal displacements of the cell contents.
- Starting in 1968, he and Prof. Shu Chien become pioneers in biomedical engineering, producing groundbreaking work in the mechanics of blood flow, bone growth, white blood cell responses to infections, and biological responses to implants.



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New York Moments

The Eleventh Decade: 1965-1974



- 1969 – An unprecedented sports championship year in New York City, with three teams winning a championship, and each for the first time:



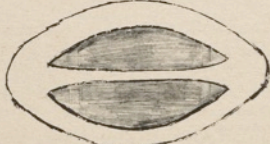
- New York Mets (baseball) win the 1969 World Series.
- New York Jets (football) win Superbowl III (in Jan. 1969, for the 1968 season).
- New York Knicks (basketball) win the NBA championship for the 1969-1970 season.



From the SEAS Time Capsules

The Eleventh Decade: 1965-1974

COLUMBIA

EARTH

DAY

TODAY

LOW PLAZA 11:00 A.M.

ADAM WALINSKY TED SORENSON MICHAEL HARRINGTON POLYKARP KUSCH JOHN ULLMAN JOHN HAYNES	Candidate for Attorney General N.Y. State Candidate for Senate, New York State President of Socialist Party Vice-President of Columbia U. Nobel Prize Winner Hofstra University Community Action Director of International Union of Electrical Workers
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AFTERNOON WORKSHOPS (partial list of speakers)

THE AUTOMOBILE URIS HALL 1 PM to 3 PM	POWER PRODUCTION EARL HALL 1 PM to 3 PM
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BRIAN KETCHAN — Director of Motor Vehicle Engineering, NYC DR. SERGE GRATCH — Asst. Director Engineering Science - Ford Motor Company JOHN QUICK — Gen. Asst. Comptroller Gen. Motors Corp. DR. HENRY LINFORD — Prof. of Chemical Engineering	Hon. JONATHAN BINGHAM — Congressman, Bronx County DR. ROBERT GROSS — Prof. of Engineering Science DR. POLYKARP KUSCH — Vice-President of Columbia Nobel Prize Winner (Physics 1955)
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OVER POPULATION EARL HALL 1 PM to 3 PM	AESTHETICS OF THE CITY EARL HALL CHAPEL 2 PM to 4:30 PM
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DR. HOWARD TAYLOR — Dir. of International Institute for Study of Human Reproduction EMILY MOORE — The Population Council CARL BERNSTEIN — Lawyer who has worked for abortion Reform.	Hon. JEROME KRETCHMER — Director of ENVIRONMENTAL PROTECTION AGENCY, NYC DR. THOMAS HOVING — Director of Metropolitan Museum of Art S.J. SHULMAN — Gen. Manager of City Div. of State Parks Com.
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SOLID WASTE DISPOSAL Rm. 201 URIS HALL 3 PM to 5 PM	NOISE POLLUTION
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Hon. GRISWALD MUELLER — Com. of Sanitation, NYC EDWIN LOCKE Jr. — Pres. American Paper Institute GILBERT TAUBERT — Chief of Public Inf. for Hudson River Valley Commission	DR. CYRIL HARRIS — Prof. of Electrical Engineering & Architecture, Columbia U. DR. EUGENE GALANTER — Prof. of Psych. at Columbia U. ROBERTA BARON — Citizen for a Quieter City, Inc.
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WATER POLLUTION
EARL HALL 3 PM to 5 PM

Dr. HARRY P. GREGOR — Prof. of Chemical Engineering, Columbia
Hon. ROBERT OTTINGER — Congressman, Westchester County
Dr. ROBERT GILMORE — Asst. Prof. of Government, Columbia

5:00 MARCH TO 14th STREET

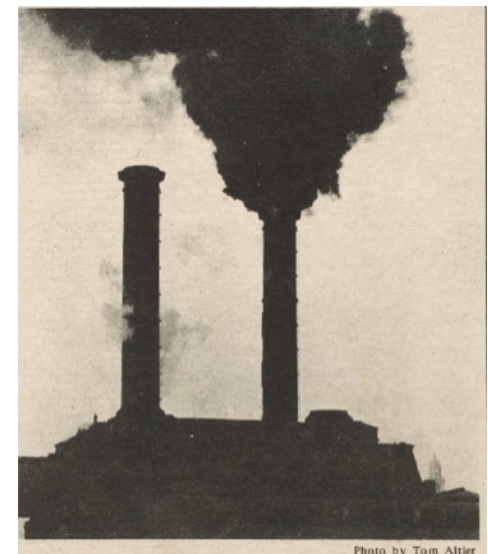
- April 22, 1970 – The first Earth Day is celebrated at Columbia, with SEAS Profs. Gross, Harris, and Linford participating.
- The *Spectator's* coverage includes a photo of smoke from a Con Ed power plant.

'Earth Day' Activities Will Be Held Today

By MICHAEL GERRARD

Thousands of Columbia students and faculty members are expected to participate today in a round of speeches, workshops, and marches as part of the National Environmental Teach-In.

Classes in the university have not been cancelled, but some students will probably be absent so they can hear nearly fifty public officials, political candidates, professors, corporation officials, and other speakers discuss the various problems of pollution: dirty air and water, excessive noise and heat, and over-population.



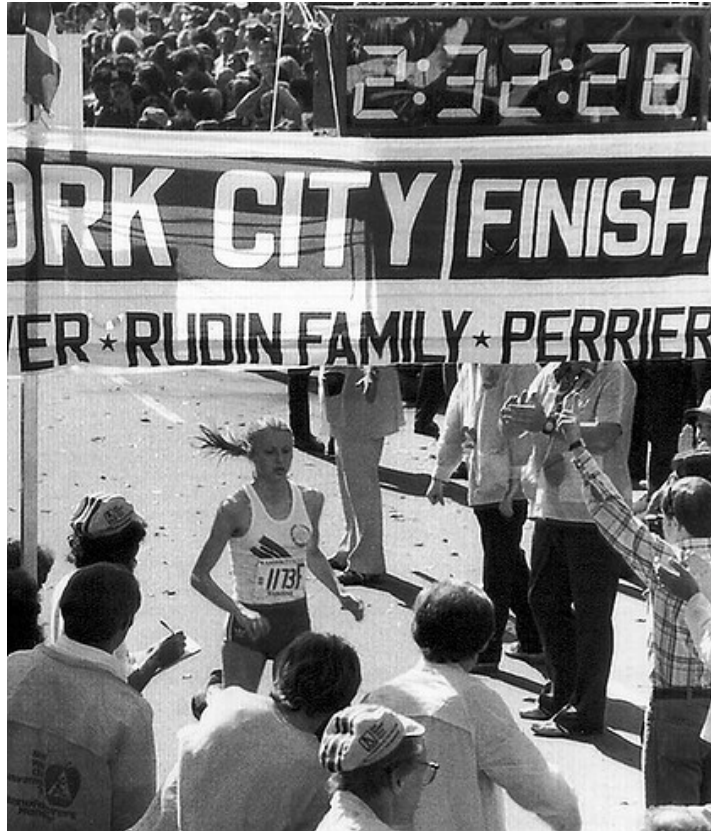
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New York Moments

The Eleventh Decade: 1965-1974



- 1970 – The inaugural New York City Marathon.
- Grete Waitz is shown crossing the finish line in 1978, completing her first of nine New York City Marathon triumphs (left).
- The below photo is from the early 1980s.



From the SEAS Time Capsules

The Eleventh Decade: 1965-1974

Biology Department Allotted Extra Space

Mudd Hall and Engineering Terrace
Will Provide 30,000 Square Feet

Hennessy Expresses Concern Over Biology Space in Mudd

While refusing to criticize an administration decision to turn over space occupied by the engineering school to the biology department, Wesley J. Hennessy, dean of the engineering school, said yesterday that he feared the university would regard the solution as a permanent one.

James Young, deputy to the vice president, announced January 14 that 30,000 square feet of space in the Seeley W. Mudd building would be allocated to the biology department to help alleviate that department's serious space problems.

Although the administration said in its announcement that the space was being loaned on a temporary basis, Dean Hennessy declared that the time factor is "my primary concern," and that he is "concerned about the temptation" to the administration to consider the space as permanently assigned to the biology department.



Wesley J. Hennessy

- The Feb. 15, 1972 *Spectator* reports "The biology department has been given 30,000 square feet of space in the (SEAS) Engineering Terrace and Seeley W. Mudd Hall to help alleviate the department's critical space shortage, The space ... is located on the second and third floors of the Engineering Terrace, and on the sixth and seventh floors of the Mudd building."
- The Feb. 24, 1972 *Spectator* reports "... Wesley J. Hennessy, dean of the engineering school, said yesterday that he feared the university would regard the solution as a permanent one. ... Although the administration said in its announcement that the space was being loaned on a temporary basis, Dean Hennessy declared that ... he is 'concerned about the temptation' to the administration to consider the space as permanently assigned to the biology department. President McGill said ... that Dean Hennessy had 'vigorously opposed' the decision."



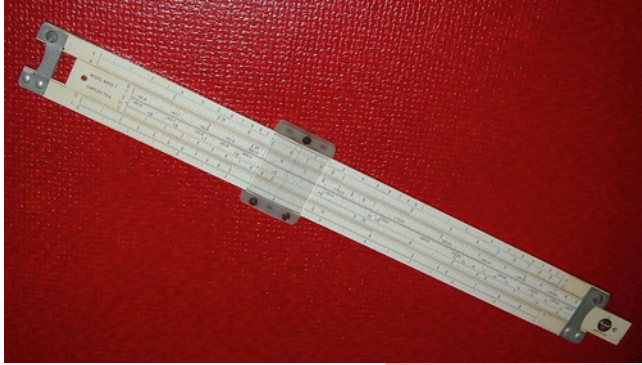
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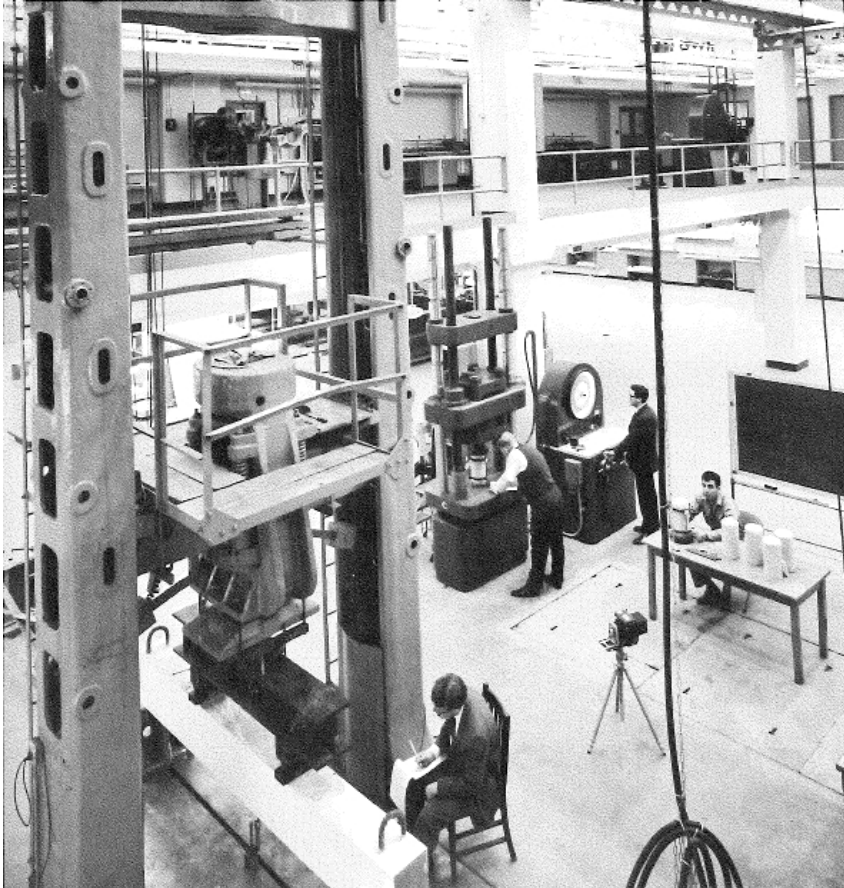
The Eleventh Decade: 1965-1974



- Hand-held calculators begin replacing slide rules.
- The HP 35 calculator, the world's first pocket scientific calculator, costs \$395 in 1972.

From the SEAS Time Capsules

The Eleventh Decade: 1965-1974



- The Carleton Laboratory; photo from the 1972 *Columbia Engineer* yearbook.



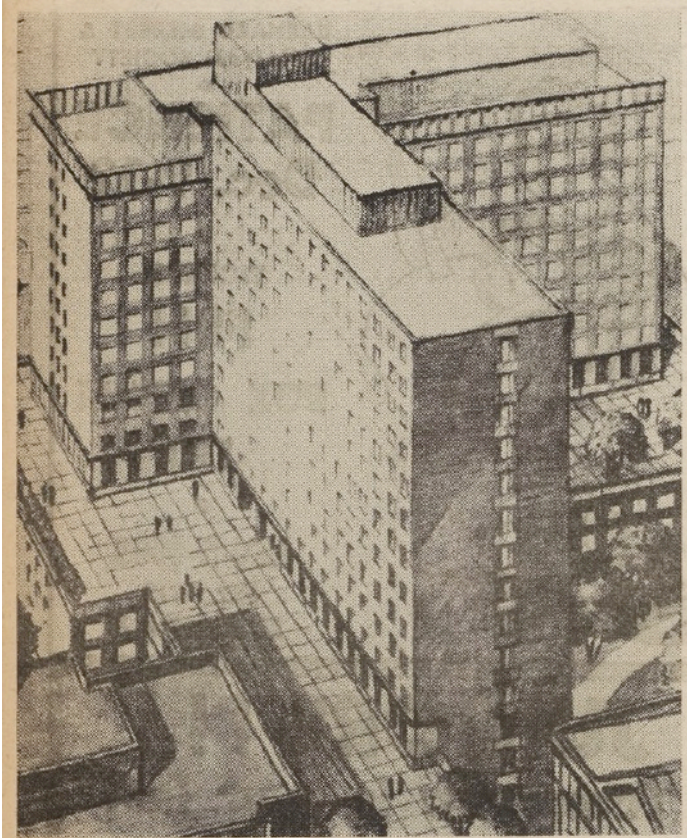
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The Eleventh Decade: 1965-1974



ENGINEERING CENTER: Mudd Hall, opened in 1960, serves as the home of the School of Engineering. Extending out at a right angle is the proposed Engineering Tower, opening on to the roof of the Terrace Building, now under construction.

- The proposed Engineering Tower, the third building in the Engineering Center, as depicted in the Dec. 9, 1964 *Spectator*, (as either a research and office building or, as more recently envisioned, a dormitory) will not be built on Engineering Terrace.
 - The May 2, 1973 *Spectator* reports “Last fall, Deputy Vice President for Academic Affairs James S. Young announced that the proposed biology tower would be built on top of the Engineering Terrace, taking up the space Dean Hennessy had suggested for the dormitory.”

Engineering to Not Build Dormitory



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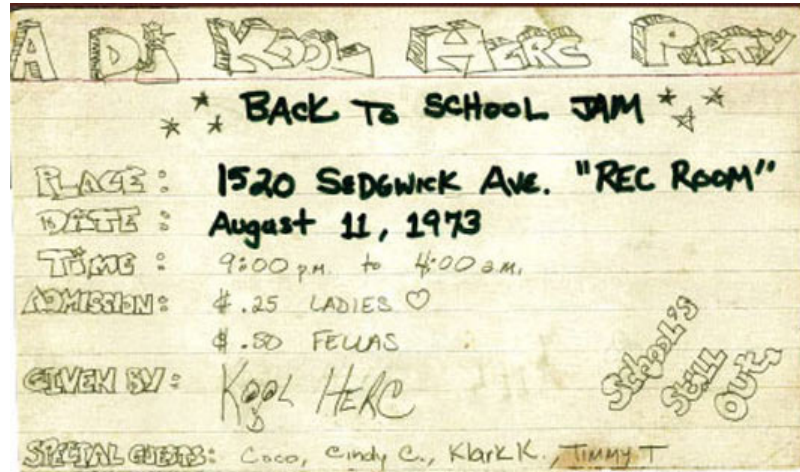
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New York Moments

The Eleventh Decade: 1965-1974

- The hip-hop and rap music movement begins in the Bronx.

- According to the *New York Times*, it starts in the basement community room in 1520 Sedgwick Avenue, where DJ Kool Herc presides over parties, starting with his sister's back-to-school party on August 11, 1973.
- He extended an instrumental beat to let people dance longer (breakdancing) and began MC'ing (rapping) during the extended breakdancing.



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http://www.cincystreetdesign.com/1520_Sedgwick/
<http://www.pbs.org/opb/historydetectives/investigation/birthplace-of-hip-hop/>

New York Moments

The Eleventh Decade: 1965-1974



- On December 16, 1973, a cement truck going to make a repair on one part of the West Side Highway causes a 60-foot section of northbound roadway near Gansevoort St. to collapse. The road is then closed permanently.
 - In 1969, it had been closed briefly when part of it collapsed, but it was quickly repaired.
- New York City infrastructure had been neglected for decades. This and the impending financial crisis in the City represented low points, and, in ways, pointed to the rebirth of the City in the 1990s.



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The Eleventh Decade: 1965-1974

Alumnus Leaves Engineering Trust Fund Worth \$8 Million

Money Will be Used to Pay Off Debt On Construction of Mudd Building

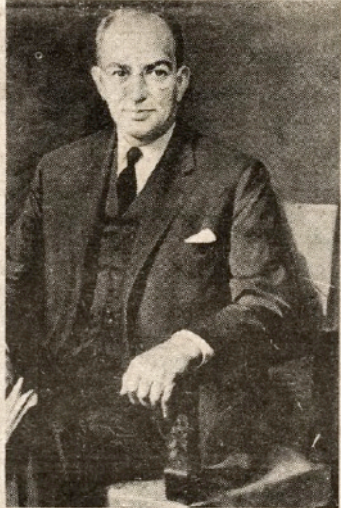


Photo by Tom Steele
Percy Hudson

Columbia receives \$12 million gift

Columbia has received a \$12 million bequest from the estates of Percy and Vida Hudson, it was announced yesterday. The donation is the second largest in the university's history. long time and part of it has already been committed to pay for "old obligations," according to Peter Likins, dean of the School of Engineering.

In 1952, Mr. Hudson, a graduate of the School of Engineering, left a trust of \$7 million to be paid to the university upon his wife's death. Vida Hudson, who died in February, also left the university \$5 million.

The bulk of Mr. Hudson's estate will go to the School of Engineering and Applied Science. The school has been expecting the money for a

- The Feb. 22, 1974 *Spectator* reports that "Percy Kierstede Hudson, an alumnus of the Columbia School of Mines, has left the university a trust fund (that) will eventually be used to pay the ... remaining debt on the Seeley W. Mudd Building,... (upper left)."
- Felix E. Wormser, Engineering '16, ..., a former Trustee who headed the Engineering Center's fundraising drive at its beginning in the late 1940's, revealed, "We were going to build another building (besides Seeley W. Mudd) atop the Engineering Terrace and call it the Hudson Building.' Plans for such a building have now been dropped."
- Later, the April 12, 1978 *Spectator* reports that the gift, now \$12 M, was received by Columbia (lower right).



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