

# urban environment

## City as village—a design for the future

Plans for cities that may not be built until far in the future were the subject of an urban design seminar sponsored recently by the American Iron and Steel Institute.

Transforming Marshall McLuhan's idea that communication can make the world a village, noted architect Louis Kahn told the conference that streets of future cities should be designed to function as "community rooms," with auto traffic diverted from residential areas to preserve their character and intimacy.

Industrial designer George Nelson said planners should focus on the constant interaction between people and their environments and suggested that creating synthetic hills within cities could change their character from one of tension to one of relaxation.

With more than 30,000 steels available to designers, more than half of which did not exist a decade ago, the experts saw many new possibilities opening up for urban construction, but emphasized that planning must be done in cooperation with city dwellers themselves.

## Town and gown cooperate for better living

Sociologists, engineers, economists and architects of Princeton University are working with the Department of Planning and Development of nearby Trenton, N.J., on a bold experiment to see if convenient mass transit and carefully planned urban-renewal construction can reverse the decay of the city's 200-year-old central area.

With the help of students, who ride buses, distribute questionnaires and meet with citizens' groups, the academic team hopes to find ways of testing classroom urban theory in a real-world situation.

Some 95 percent of central city users now rely on their automobiles, so one of the first priorities in reshaping Trenton will be to introduce modes of mass transportation that can compete with the car. Co-director Alain Kornhauser says these may include dial-a-bus, mini-buses and small, self-contained units that would function like automatic elevators.

The other main feature of the plan would be a reconstructed downtown area called Trenton Commons, with a traffic-free mall, housing for 8,000 persons within walking distance of the Commons and elevated walkways and garages to separate auto and pedestrian traffic.

## ERTS may help plan future cities

Even if the United States stabilizes its population growth, urban sprawl will continue, says Dartmouth geographer Robert B. Simpson.

To help counter this threat, or at least channel the growth of cities into areas that can best support them, Simpson and his colleagues are using photographs taken by the Earth Resources and Technology Satellite (ERTS) to produce land-use maps from which urban growth can be projected.

The satellite photographs New England, for example, every 18 days, producing in four frames what once took 300, and allowing the geographers to produce their eight-color land-use maps in roughly one-tenth the previous time. The amount of American land under concrete, according to Simpson, will double by 1980 and a computer analysis of his new maps could help locate the new urban areas so as to minimize their effect on agriculture and the environment. If such analyses could have been done a quarter century ago, Simpson says, "we might have been able to avoid much of the urban sprawl that exists between Boston and Washington today."

June 30, 1973

# archaeoastronomy

*From our reporter at the AAAS meeting on Science and Man in the Americas in Mexico City*

## The light on Abu Simbel

The temple of Abu Simbel in Egypt is considered by some to be the finest monolithic sculpture in the world. Light from the brilliant sunrise glides down the rose-colored massif, penetrating the 60-meter length of the temple to the inner sanctuary, where it illuminates a statue of Rameses II. According to Gerald S. Hawkins of the Smithsonian Astrophysical Observatory, there seems to be significance in this play of light, which takes place on only two days a year.

Hawkins reports that Abu Simbel is indeed astronomically aligned. The illumination at sunrise in 1250 B.C. fell on the statue of Rameses on a significant day: the year and the day marked Rameses' 30th year jubilee, the time when Rameses was to begin the process of changing into a god during his lifetime.

"This simple result radically altered the interpretation of the temple," says Hawkins. "It was carefully site-selected and astronomically planned ahead of time so that the flash of sunlight would align on the pharaoh-god effigies. . . ." The few seconds of this celestial ceremony would be re-enacted each year, Hawkins suggests, although the dates would thereafter fall progressively later in the civil calendar. "These are almost inescapable conclusions yet there is no specific mention in the hieroglyphics."

## The astronomical record in Chaco Canyon

A scientific group has added to what they call mounting evidence that the Indians who occupied Chaco Canyon, New Mexico, from A.D. 700 to 1200, had a sophisticated understanding of elementary astronomy.

In August 1972 Ray A. Williamson, Howard J. Fisher and Abigail F. Williamson of St. John's College in Annapolis, Md., and Clarion Cochran of Chaco Canyon National Monument measured the alignment of three large kivas. They found that walls of two of the kivas, known as Pueblo Bonita A and Casa Rinconada, were accurately aligned in a north-south direction. They believe the Indians used either solar or stellar observations to achieve this alignment. (Polaris was not at its present position as a pole star when the kivas were occupied and thus other techniques would have been necessary to find north.)

In a survey of the mesa tops north and east of the two sites the group discovered perpendicular directional markings cut into the rock. Both markings are aligned so that they would point to the position on the horizon at which the sun would rise at the day of winter solstice. The inference is that they were intentionally carved solstice markers. "The mesa east of Casa Rinconada seems to be a kind of observatory of the sun," says Williamson.

## Comets, novas and the Mayans

Did the Mayans record novas and comets? Hubert E. Harber of Westchester State College in Pennsylvania has studied a particular Mayan hieroglyph in a search for the answer. It seemed promising because 20 Mayan dates were associated with the glyph, and it seemed to indicate something about astronomy. But comparing dates of known historic novas and comets with the Mayan dates, he found no acceptable correlation. Nevertheless he believes that the Mayans probably did record such events and that a record will eventually be found.

423