

REACHING FOR THE STARS

Reviews by Steven Strom

Imagining Space: Achievements, Predictions, Possibilities: 1950-2050
by Roger D. Launius and Howard E. McCurdy. *Chronicle Books*, 2001. 176 pp., illus., \$35.

Living in Space: From Science Fiction to the International Space Station
by Giovanni Caprara. *Firefly Books*, 2000. 213 pp., illus., \$29.95.

2001: Building for Space Travel
ed. by John Zukowsky. *Harry N. Abrams*, 2001. 192 pp., illus., \$39.95.

Space exploration, and, by extension, space architecture, is now in a sad state. With the decline of Russia's space ambitions, the United States is left to lead the way, yet serious budget cutbacks bedevil the U.S. space effort. Even the achievement of the International Space Station is diminished by the fact that the ultimate winning design, created by committee and consensus, lacks architectural brilliance.

But the current sorry state of affairs throws into high relief the astonishing creativity of the last half-century. In 1958, just one year after the Soviet Union launched Sputnik I, the world's first artificial satellite, a U.S. House committee asked many of the west's leading scientists, engineers, and military leaders to predict the future of space travel. Entitled *The Next Ten Years in Space: 1959-1969*, the report explored subject areas that were entirely new in the history of humankind. Glauco Partel, the founder of the Italian Rocket Association, found it necessary to explain some of these "alien fields" to the reader. So inchoate was the emerging field of space architecture, Partel defined it simply as a "new technological branch to be evolved (projects for lunar bases, Mars stations, etc.)."

The field has come a long way. Today, of course, space architecture has established itself as a branch of traditional architecture. (The University of Houston's Sasakawa International Center for Space Architecture plays a leading role in providing the nation with space architects.) Three recent books survey the field, noting its high points and offering hope for the future.

The beautifully illustrated *Imagining Space* could serve as a coffee-

table book, but its text is more ambitious than most. With a forward by Ray Bradbury and text by both Roger D. Launius, the chief historian of NASA, and Howard E. McCurdy, who has written extensively on the U.S. space program, *Imagining Space* covers the history of the first 50 years of space flight and attempts to project the future of space exploration and discovery in the first half of the 21st century. The authors touch on the major components of current and future space issues in such chapters as "The Commercial Space Frontier," "Space Warfare," and "The Greening of Space." Despite their discussion of the possible new technologies that we will need to expand our extraterrestrial presence, Launius and McCurdy correctly point out that "space is a realm for the extension of everyday activities that humans carry out on the surface of the Earth and in the air." And it is in the adaptation of such commonplace human activities to the extraordinarily new realm of outer space that space architecture has played — and will continue to play — an important role.

Some specialists might argue that Giovanni Caprara's *Living in Space* covers heavily trodden ground, but the general reader could not ask for a better synthesis of the historical origins of the first concepts for space habitation and the nuts-and-bolts reality of actual attempts. Caprara begins with early U.S. space-station studies, including the Olympus Project, which Houston's Manned Spacecraft Center designed in the early 1960s. He then does space history a favor by giving the far-sighted Manned Orbiting Laboratory (MOL) its due. MOL, the Air Force's own concept for an orbiting space station, was approved by President Lyndon Johnson in 1965, and it consumed an enormous amount of time, money, and brain power from private contractors such as the Douglas Aircraft Company and the Aerospace Corporation. In 1969, President Richard Nixon canceled the program purely for budgetary reasons.

One of the book's greatest strengths is its discussion of the Soviet Salyut and Mir space station programs. The infighting between the two major factions within the Soviet space establishment made any political maneuvering within the U.S. space program look like child's play. Caprara points out that the

Soviets/Russians were the first to establish a viable presence in space, still hold most of the longevity records for spaceflight, and created the Soyuz rocket, which is statistically the most reliable launch vehicle in the history of space exploration. Only in recent years, with the decline of the Russian economy, has the Russians' rate of successes begun to drop.

Living in Space concludes with the hopes provided by the International Space Station (ISS), possibly the largest engineering project ever. The drawings and illustrations for the ISS section are particularly interesting since they reveal much of the trans-national design process. Taken as a whole, *Living in Space* shows the sometimes painstakingly slow steps that have led to a permanent human presence in space. Yet the book also reminds us that it's only been a century since men first dreamed of space stations.

For architects, *2001: Building for Space Travel* will likely hold the most interest. Based on an exhibit held at the Chicago Art Institute and Seattle's Museum of Flight, the book aims to remind us that "architects, civil engineers, industrial designers, and graphic designers... are as integral to the implementation of the dream of space travel as set and production designers are to the creation of the environment in which a movie is filmed." The book's fascinating essays explain how the aesthetics of the space age became an integral part of late 20th-century life (the beautiful illustrations vividly portray the new iconography) and show the promise that living in space holds for humanity as a whole and the architectural community in particular. The book's essayists critique space designs, both in real-life applications, such as the interior design work that went into the manufacture of Skylab, and in entertainment and the mass media, whether on the Disneyland television program or in the pages of *Collier's* magazine (which presented the fabulous illustrations of space artist Chesley Bonestell in the early 1950s).

The personal odyssey of designer Raymond Loewy, known to Houston architectural history buffs as the interior designer of the downtown Foley's department store, shows the speed of

the technology in the 20th century. The essay "Eye on the Sky" includes a remarkable photograph of the Space Gun ride that Loewy designed for the 1939-40 New York World's Fair. A mere three decades later, Loewy's firm was asked to develop design schemes for Skylab, America's first space station.

This example of the rapid absorption by the human psyche of the new frontier of space leads us to the speculative aspects of these books. For it is in the future-oriented potential of space tourism, colonization, and travel to other planets where the greatest possibilities await the next generation of space architects. At locations as varied as the previously mentioned Sasakawa Center; space architect Nader Khalili's California Institute for Earth Art and Architecture (which advocates the use of indigenous space materials for space construction) and the European Space Agency's Space Station Design Workshop (where students from across Europe gather to plan their own space station), designs are being prepared for the space hotels, space vehicles, and spaceports of the future. It is important that architects are helping to lead the way out of our gravity-fixed existence. As Rachel Armstrong notes in *2001*, "space travel and space habitation pose more than an architectural challenge: they constitute a political and social issue embodying the cultural aspirations of the human race."

Words like those stir the soul of anyone likely to enjoy these books, and I definitely belong in that camp. I believe that space architecture will, in the not-too-distant future, once again have an important role to play, for it is in the essential nature of humans to explore. I agree with the optimistic forecast of the Russian scientist Konstantin Ziolkovsky, one of the founders of the science of astronautics. In a 1913 letter to a colleague, Ziolkovsky wrote, "Mankind will not remain on the earth forever. In the pursuit of the world and space, he will at first timidly penetrate beyond the limits of the atmosphere and then will conquer all the space around the sun."

Books like these three allow us to dream of that day — and to appreciate how far we've come since Ziolkovsky dreamed of it.