Sorry, Out of Gas
Canadian Centre for Architecture, Montreal
7 November 2007–20 April 2008

In the autumn of 1973, in connection with the so-called October War between the Arabs and Israelis, the Organization of Petroleum Exporting Countries drastically increased (eventually quadrupled) oil prices, cut production, and imposed embargoes on countries aiding Israel. These measures produced what came to be known as the Oil Crisis, among whose outcomes was that service stations ran out of gasoline, hence the title of this exhibition. The subtitle of the exhibition catalog is Architecture’s Response to the 1973 Oil Crisis. The response referred to is not the double glazing and R-20 insulation that became the standard for North American housing, but a neglected episode in American building: the technological exploits of the youth counterculture of the 1960s. Part polemic and part nuts-and-bolts invention, this movement (if that is not too grand a word) was variously referred to as alternative technology, radical technology, low-impact technology, or soft technology. The Canadian Centre for Architecture (CCA) exhibition documents this small piece of history with a large quantity of mostly ephemeral material, such as book jackets, pamphlets, television film footage, and taped interviews. As far as I know, this is the first time that the subject has been formally exhibited in a museum and in such a comprehensive manner.

In truth, very few of the leading figures of the alternative technology movement were architects. Alternative technology attracted mostly engineers, scientists, and self-taught inventor-tinkerers; architects were more likely to be interested in Louis I. Kahn and Philip Johnson, or in the Postmodernism of Robert Venturi and Charles Moore. But buildings were definitely at the center of alternative technology. Paramount among its obsessions was the solar house, that is, a house heated entirely by the energy of the sun. Research in solar heating goes back to 1939, when the first in a series of test houses was built at the Massachusetts Institute of Technology. Further solar prototypes appeared in the postwar years, mostly in Arizona and Colorado, parts of which have cold winters with many cloudless, sunny days. These experimental structures incorporated large south-facing, glass-covered, solar collector panels through which water was circulated. Since these panels were tilted to the sun, they produced a characteristic “wedge-of-cheese” shape.

The solar houses of the late 1960s were different. In 1967, a French scientist, Félix Trombe, invented a simple solar heating device using a thick, glazed south-facing concrete wall. During the day, the glazing trapped the sun’s rays and the wall (usually painted a dark color) heated up; at night the back of the wall radiated the heat into the house. Since this simple technology did not require pumps or fans, it was called a passive system. Steve Baer, an American engineer, produced an ingenious version in 1971, using water-filled oil drums instead of concrete, and large insulated shutters. In the winter, the shutters were opened during the day, the water heated up, and at night the shutters were closed and heat radiated into the house; during the summer, the process was reversed. Douglas Kelbaugh built a more conventional Trombe-wall house in Princeton, New Jersey, in 1975. A much earlier passive system (not in the CCA show) was designed by the inventor Harold Hay in Phoenix in 1967. Hay used a rooftop water pond covered by sliding insulated panels to trap the heat at night, which produced a similar result, except via a radiant ceiling. During the summer, the panels were open at night and the water, which had absorbed the heat of the house during the day, radiated heat into the sky.

Another alternative technology favorite was the autonomous house: a self-sufficient dwelling that was not simply heated by the sun, but also recycled water and waste, and produced its own energy and food. Autonomous houses also sometimes included methane digesters, greenhouses, solar water heaters, and wind machines. The motivation was a combination of resource conservation and antiestablishment “getting off the grid” sentiment. The CCA show includes a number of interesting examples: McGill University’s Ecol Operation in Montreal (with which this reviewer was associated); the Integrated Life Support System (ILS) Labs in Tijeras, New Mexico; the Farallones Institute’s Integral Urban House in Berkeley; the New Alchemy Institute’s Ark in Prince Edward Island; and the University of Minnesota’s Ouroboros Project. Notable about these projects is that they were largely individual efforts, produced on a shoestring budget.

Exhibitions on architecture are hampered by the absence of the central artifacts—the buildings themselves—and this exhibition is no exception. There are so many photographs, posters, diagrams, self-help pamphlets, and book jackets that one comes away with the false impression that alternative technology was a publishing movement rather than a hands-on, do-it-yourself project. Yet, the archival material collected here will prove invaluable to future researchers. Although Canadian and European examples are included, the material is chiefly American, which is as it should be, since the alternative technology episode followed in the tradition of the Wright brothers and Thomas Edison, not to mention Rube Goldberg, although the latter quality of alternative technology is not evident in the CCA show.

There are clearly parallels between the 1960s and 1970s fascination with solar energy, composting toilets, and wind machines, and present-day con-
cerns with global warming and green architecture. One of the timely messages of the CCA exhibition is that we have been here before—we do not need to reinvent the wheel. For example, many researchers in the 1970s came to the conclusion that simply adding insulation was more cost-effective than complicated collection and storage devices. This is still a useful lesson, particularly at a time when architects appear bent on incorporating scores of green techniques, some of which have dubious energy conserving value. Sorry, Out of Gas also makes hay out of the scary social aspects of the Oil Crisis, showing dramatic photos of empty streets and gas line-ups. However, an eye-catching display of board games dealing with the oil crisis seemed forced—did many people really play Petropolis or Black Gold?

There is one problem with the exhibition’s thesis that Trombe walls and water-filled barrels were a response to the Oil Crisis. There are a number of possible starting dates for the counterculture’s involvement with alternative technology, but they all precede 1973. An important event occurred in 1969—the year of Woodstock when architects appeared bent on incorporating scores of green techniques, some of which have dubious energy conserving value. Sorry, Out of Gas also makes hay out of the scary social aspects of the Oil Crisis, showing dramatic photos of empty streets and gas line-ups. However, an eye-catching display of board games dealing with the oil crisis seemed forced—did many people really play Petropolis or Black Gold?

One could even go back earlier. According to Tom Wolfe’s The Electric Kool-Aid Acid Test (1968), which chronicles the exploits of Ken Kesey and his Merry Pranksters (to which Stewart Brand belonged), Brand had the idea of building a geodesic dome as early as 1965. This was an important moment, for the geodesic dome became the architectural icon of the counterculture—domes at Drop City were built of recycled car roofs, and Baer created his own versions of geodesic domes, which he called zomes. Brand acknowledged Buckminster Fuller, the inventor of the geodesic dome, as one of the key inspirations for the Whole Earth Catalog, and Fuller’s (largely unacknowledged) shadow looms large over Sorry, Out of Gas. In his introductory essay to the accompanying catalogue, CCA director Mirko Zardini, curator of the exhibition (with Giovanna Borasi), sets up a dichotomy between Fuller and the younger generation of alternative technology designers. But Bucky Fuller was obviously the godfather of the alternative technology movement, and it was Fuller’s writings, as well as the Whole Earth Catalog, the example of the outlaw designers, and the whole counterculture zeitgeist, that were the real stimulus for alternative technology, not the Oil Crisis.

The Oil Crisis did have one important effect on the alternative technology movement: it brought it public attention, and thereby hastened its demise. High fuel prices created media and public interest in anything that promised to save energy, and the previously ignored autonomous houses, solar heaters, and wind machines suddenly had news value. Mainstream publishers came calling and scores of self-help pamphlets were turned into best-selling paperbacks. In other words, what had been a grassroots movement quickly became commercialized. In the process, experiments were turned into panaceas. Unsubstantiated claims were made for alternative technology. While some inventors, like Baer, resisted this trend, many got swept up in the commercial frenzy. And when oil prices returned to normal, the public lost interest.

Might I be allowed a personal quibble? The CCA exhibition, designed by Montreal architects Saucier + Perrotte, consisted of tilted planes, jagged panels, and display tables that resembled Darth Vader starships, made out of a material that looks like black Kryptonite. In other words, it was all très chic. For someone like me, who was involved in alternative technology in the 1970s, it made for an odd juxtaposition. Whatever alternative technology was—and it could be foolish, self-indulgent, and hopelessly pedantic—it was not concerned with fashion. It felt odd to revisit the earnest experiments of my youth displayed as if they were the latest products of Prada or Jimmy Choo.

WITOLD RYBCZYNSKI
University of Pennsylvania

Related Publication