

Habitat: Exciting Concept, Flawed Execution

Landmark at Expo Breaks All Rules of Construction

By ADA LOUISE HUXTABLE
Special to The New York Times

MONTREAL, April 29—One of the first things a visitor may see at Habitat, the dramatic housing demonstration that is the permanent symbol and landmark of Expo 67, is a mailman walking along the street. But there is a difference from the ordinary street.

The street is a skystreet and it is 10 stories in the air. That is just one small sign of the fact that everything is different about the handsome and controversial architectural experiment sponsored and paid for by the Canadian Government and built by a 28-year-old Israeli architect, Moshe Safdie.

It took a lot of negotiation with the city to get that mailman up in the air instead of on the ground. Negotiation is going on to have the utility streets under the skystreets—also up the air—treated as municipal utilities, as they are in ordinary underground installations of suburban developments.

Every Rule Is Broken

Just about every housing and building rule, precedent, practice, custom and convention is broken by Habitat. This includes design, engineering, construction, trade union operation and the way people live. There have been two results. One was snowballing costs and technical problems. The other is a significant and stunning exercise in experimental housing that is also the most important construction at Expo, where architectural excellence abounds.

What Habitat is, to the eye, is a Mediterranean cluster of pyramided and jutting boxes that form one-story and two-story houses so that the roof of one box makes the garden terrace of another. As the Montreal weather warms (they say there are two seasons—winter and July), the irregular, geometric mass will be softened by planting on all roof levels, centrally irrigated, and by masses of flowering shrubs on the ground.

But Habitat is much more than meets the eye. Each of these boxes is a prefabricated 80-ton, box-like concrete unit—the roof is cast separately—manufactured and assembled on the site. Some elements, such as Fiberglas bathrooms, are factory-made and assembled in the boxes before they are hoisted into place.

The design is based on the



The New York Times (by Edward Hausner)

Habitat was designed and built by Moshe Safdie of Israel for the Canadian Government

idea that, in an age of perfected industrial techniques and critical housing shortages, there should be a housing product based on industrial, rather than handcraft processes.

What merely looks picturesque here is actually the variety that can stem from the combinations possible with a prefabricated, industrialized system. The importance of the concept for housing design and production cannot be overstated.

At Habitat, the staggered elements insure maximum privacy. Instead of a filing-case slab of apartments, each dwelling is a one-story or two-story house of two or more boxes, with three to four exposures. Each has its outdoor area.

Three cores are stacked around three elevated towers to a height of 12 floors. Plastic-covered pedestrian streets are on the 6th and 10th floor levels. In addition to aerial streets, there are aerial playgrounds.

\$11.5-Million Budgeted

For \$700 a month for the duration of Expo, with rents reduced after that, 158 tenants (many are concerns rather than families, since units have been rented as corporate hospitality suites during the fair) can enjoy striking, water-surrounded views of Expo and Montreal, in one of the most attractive living experiences of our time. The structural system creates interior spaces of unusual amenity.

Habitat, should, of course,

be standardized and inexpensive. That is the whole idea. The design is meant for assembly-line production on a large scale, with all of the skill, efficiency and economy that this implies.

As it stands, Habitat is one-sixth of its originally projected size and enormously expensive. It was planned as a \$42-million project of 1,000 units. The budget was subsequently cut to \$11.5-million.

It took \$5-million just to develop the manufacturing plant and machinery.

With the balance, only 158 units could be built. What was meant to be mass produced is virtually handcrafted sample, and costs have soared to more than \$100,000 a unit.

Once the Federal and provincial governments gave the go-ahead and the site production was set up, Expo and Mr. Safdie's firm and the contractors put up Habitat in 10 months and 21 days from the first box to the last.

Result Is an Experiment

Working on Expo's schedule on a project that should have had at least two years of preliminary analysis and experiment, the job was done without proven production methods, without test drawing and without previously developed techniques. The on-site prefabrication was purely trial-and-error, as was the whole construction process.

A crane bought early on the

basis of an assumed unit weight proved inadequate for the final size of the boxes and they had to be cast with separate ceilings. A preassembly process that should have been established with computerized precision was unrealizable because of snags in tight schedules. Full assembly on the ground became impossible.

"Fifty per cent of this could have been foreseen with enough time," says Mr. Safdie. "Fifty per cent could not have been foreseen even if Leonardo da Vinci were doing it."

The result is an experiment, not a final demonstration. The costs and errors are those of a prototype model. It is pointless to apply market values or conventional price tags.

The pertinent questions are what has been learned and what has been achieved. Habitat is striking architecture, but it is just as important that the prefabricated bathrooms, which cost \$1,400 a unit to develop, are already being placed on the market by the manufacturer for \$700.

Whatever happens, Habitat will go down in history as a flawed, but extremely important, 20th-century exercise in housing design. Montreal has an international landmark and eventually 158 urban families will live just a little bit better than some of the rest of us.

Both the puzzle and the promise of the future is in this housing.