“Innovative architecture has to do with someone reading the secrets of a place in a profound way. Sometimes, what you read into a site has to do with its future, not with what is already there.” - Moshe Safdie

Moshe Safdie’s Habitat 67 was the main exhibit in the 1967 Montreal World Exposition, a design originating from his college thesis: “A Three-Dimensional Modular Building System.” Safdie drew inspiration from the hillside villages of Israel, where the “house” was located in a high density complex composed of modular units. The idea had such traditional roots, but also had to set examples for innovation and standardization in the Exposition. Safdie responded with a scheme of three-dimensional pre-fabricated modules that integrated the urban structure by providing a range of facilities within a single organism. He hoped that this could catalyze future urban development on the surrounding shores of the St. Lawrence River.
Different apartment configurations used in Habitat 67 based on the box module.

Axonometric of living unit in relation to roof slabs and garden spaces. Red lines indicate post-tensioning.

Wall section of box connections showing post-tensioning (refer to axonometric on right).

(Left) Typical pre-fab. bath unit inserted into each apartment.
(Right) An apartment plan showing a living arrangement. Each layout varies based on the unit configuration.
The entire structure includes 354 modules, creating 158 separate residential units, with 15 different variations of layouts. A single module is 17'-6" x 38'-6", and is 10' high. Each weighs from 70-90 tons. A precast factory was constructed on-site and used 4 large steel moulds to build the units. Each was capable of producing a single module within 48 hours. When a precast modular unit was being cast, different moulds were put in place for the different window openings, dependent upon which type of unit it was. Once the concrete cured, the wood subfloor was built into the unit. Pre-fabricated components, including bathrooms and kitchens, were manufactured off site. Once a unit was complete, these components were sent to the site and set into each unit. The complete unit was lifted by a crane and set into place. Once in place, necessary structural connections were made, as well as plumbing and electrical. The structure of Habitat 67 was built in a total of 10 months and 21 days.
ANALYSIS

Post-tensioning below walkway where mech. storage is enclosed (refer to section on left).

Elevator shafts connect to pedestrian walkways where tenants can access their apartments (either one floor above or one floor below). Walkways occur on the 5th and 9th floors.

The load transfer between apartments is most intense at ground level and decreases as each stacks upon another.

(Left) Interior view of Living Room in apartment unit showing the St. Lawrence River below. (Right) Interior view showing the stairs connecting a lower unit to one above.