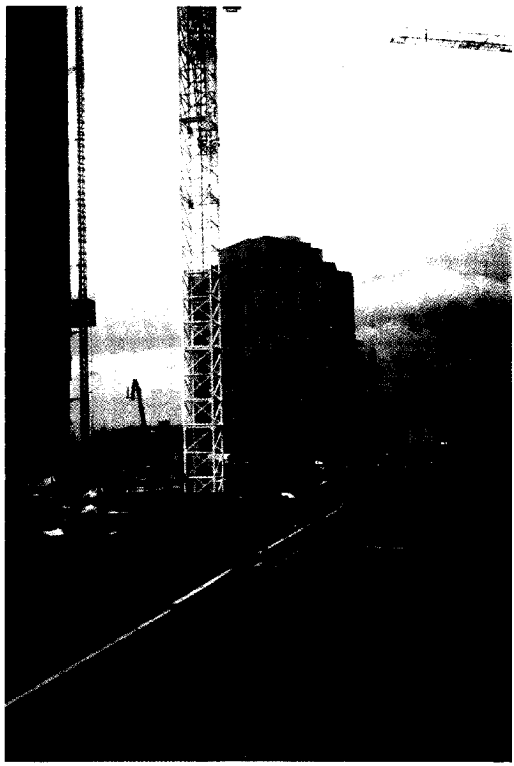
The first consideration, easily handled by the choice of cast-in-place reinforced concrete as the building material, concerned height, says Ed Sweerts, an engineer with Kazmar Associates Limited, Consulting Engineers. "In residential construction, only prestressed or reinforced concrete is considered economical. The main reason is the floor to floor height which can be maintained at 2.6 metres. This is very important where height restrictions apply." By using concrete on the project, in effect, for every four floors, the architects were able to gain one additional floor, says Denis Rioux, architect and a partner with Page & Steele Architects.

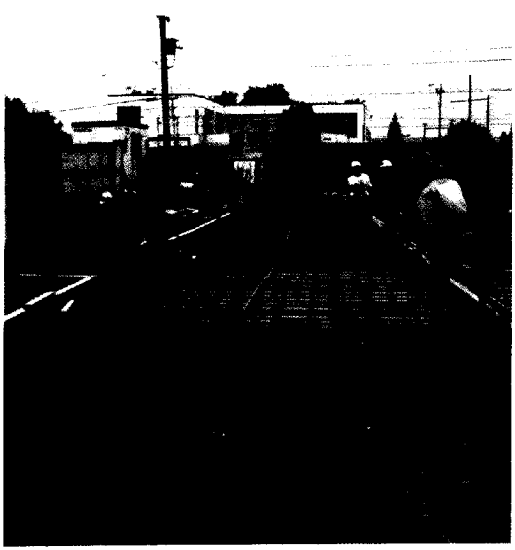
Even still, the irregular design of the project, bent on its own axis, depended on the flexibility of concrete, according to engineer Sweerts. "The unique architectural design of Marina Del Rey, in which the upper floors step back at several levels, was structurally accomplished by locally increasing the slab thickness, thereby transferring the loads with a minimum increase in floor to floor height," he says.

The construction of the Marina Del Rey project, including the below grade parking garages, utilized over 54 500 cubic metres of concrete. Reinforcing this were more than 5 000 tonnes of rebar.



Epoxy-coated rebar was used throughout the parking structures for corrosion resistance.

5,000 tonnes of rebar were used.



The sheer size of the project might have been daunting if construction had needed to proceed all in one phase. But, says Bill Jamieson, job captain of the project for Page & Steele Architects, the use of concrete allowed for the project to be erected in stages. The building was built in four separate blocks and then literally tied back together again.

Still, the speed of construction was one of the foremost considerations in everyone's mind and therefore, formed much of the decision to go with concrete, acknowledges El Ardizzi, project manager with the contractor, Edilcan Construction Corporation. Construction of the 300-unit Phase One began in 1988, continuing with the 264-unit Phase Two and 255-unit Phase Three through 1989. It is expected that Phase Four, the commercial office building, will be completed in 1990.