

could manage to reduce the construction time period from two years to one year. It is perhaps too much to expect that the perfection of year-round/all-weather construction techniques by themselves could produce such an improvement. Conversely, however, it is not too much to hope that, if we could first eliminate weather delays and then progressively move ahead to make additional improvements by tight scheduling and by eliminating work stoppages and material delays, we could make such substantial economies and reach such a goal.

Returning to our apartment development project, let us dream a little on how construction and occupancy should proceed. If we could prescribe an optimum schedule, the owner-developer would determine on a site on July 1st and secure an option to purchase at that time. Time for market analysis, preliminary plans and specifications, permanent and construction financing hopefully could be completed by December 31st. Completion of detailed working drawings, financial arrangements, the taking and analysis of bids might permit a construction contract to be awarded March 1st. Ideally, it should be possible for construction to be completed in 13 months or by the following March 31st. This then would provide an ideal occupancy period starting on April 1st, and if the project was well situated and designed, it could be fully rented and occupied by June 1st. This assumed 13-month schedule is fantastic and would leave the typical operator shaking his head in proper disbelief.

Let us now be a little more conservative and take a construction period of 17 months. As was assumed in our previous example, this would mean the closing of a 90-day option to purchase on July 1st, intensive study and work to complete the market analysis, detailed plans and specifications, financing arrangements and an award of the construction contract by March 1st. With a 17-month construction cycle, the apartment building would be available for occupancy by August 1st of the following year. In comparison with present performance standards, this would be an excellent accomplishment. However, you will note that a 17-month construction cycle increases the financial carrying charges by \$150,000 as compared to the 13-month cycle.

At this point it may be appropriate to comment on two important considerations in apartment house construction and marketing. Ideally, all builders would like to be able to begin construction as early in the spring as possible, say March 1st. From the viewpoint of real estate management and marketing, the preferred time of completion and occupancy of an apartment building is early spring. Early fall completion is a second choice. July and August are typically slow months in renting or selling as is the period between Thanksgiving and Easter. Thus it follows that in our 13-month construction cycle example, a two months' tolerance is present. If this time schedule is missed, then insofar as renting or selling is concerned, you might as well accept the 17-month cycle with a two months' tolerance. Similarly, if you cannot make this limit, you might as well settle, insofar as marketing is concerned, on the 24- to 26-month construction cycle.

As would be expected, the financial carrying charges can and do vary very substantially with the variations in construction time. Thus, in our example, a 24-month construction cycle involves financial carrying charges that are \$412,500 higher than the 13-month cycle and \$262,500 higher than the 17-month cycle.

My personal judgment is that based on today's average or typical performance, a 24-month construction cycle would be normal. Superior performance, fortuitous circumstances, and a considerable degree of luck might enable a good builder to do it in 17 months. Improvement in all-weather construction techniques, tighter work and material delivery scheduling, and the elimination of work stoppages and delays in material delivery should make possible a 12- or 13-month performance.

There are, of course, many other costs in addition to the financial carrying charges that result from construction delays. Certainly a very high dollar penalty is incurred as the price of wasted construction time. Local assessors are prone to place a progress assessment on a building under construction, so real estate tax costs become an additional financial burden with a stretch-out of the construction period. Likewise, the developer must begin his renting or selling promotion program long before the building is completed, if he expects to rent or sell his apartments quickly. Also, the renting or selling program must be started as early as possible if, as is frequently the case, the take-out permanent financing must await the achieving of 70, 80, or 90% occupancy. Thus, the vagaries of weather in delaying construction progress can prove costly, particularly to the extent to which you must allow a time factor of safety in establishing