The Economics of Mid-Rise and High-Rise Projects

The economics of mid- and high-rise projects can be dichotomous. The first decision to make is whether the project will be for rent or for sale. Rental projects are easy to finance, but it is hard to make development numbers work; and for-sale projects are difficult to finance, but it is easy to make them pencil out. Then there is the question of demand—an important consideration before design even enters the equation.

TABLE 1. RENTAL DEVELOPMENT (200 TOTAL UNITS)

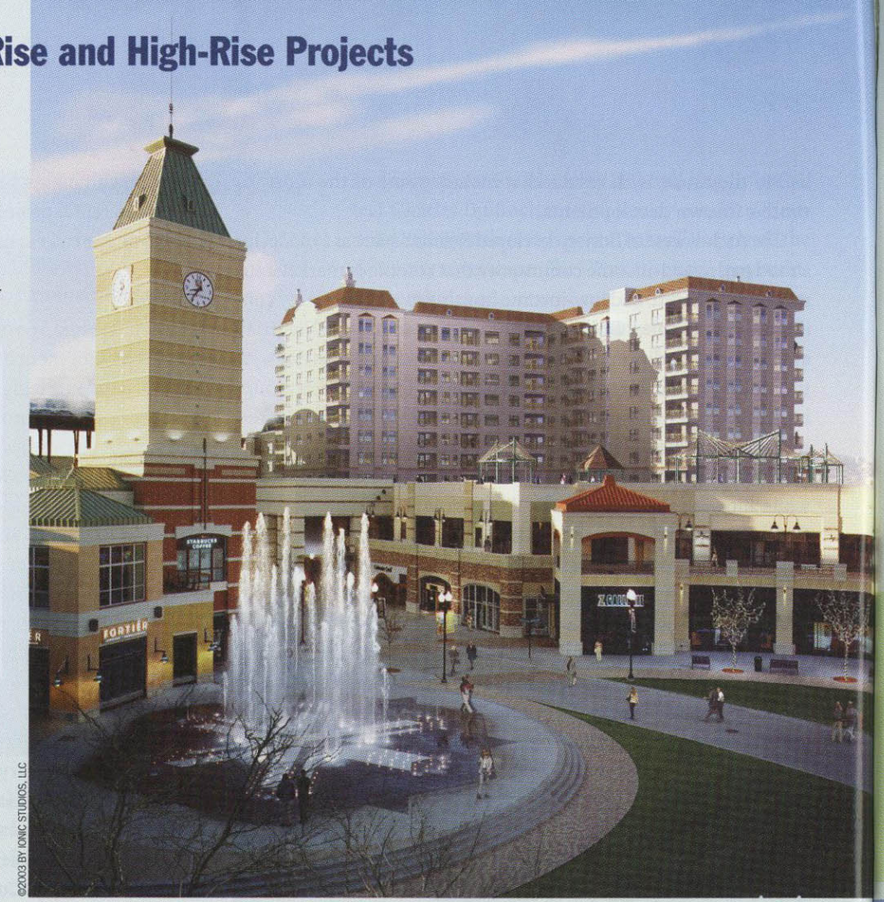
Land:	100 units per acre @ $60 per square foot; two acres = $5,227,200
Land per unit cost:	$26,136
Construction cost (for a 1,300-square-foot unit):	$195,000 per unit ($150 per square foot)
Soft cost:	$15,000 per unit
Total cost:	$236,136 per unit

It is extremely challenging to get the numbers to work in a rental project, especially in a high-rise building. Table 1 illustrates he economics of paying $50 to $75 per square foot for good urban land.

According to a template provided by Stacy Gray, an analyst with Cambridge Development Group of Houston, based on the aforementioned economic factors, a unit would need to rent for $2.25 per square foot with a capitalization rate of 6.75 to achieve a sale value of $367,000 per unit. This would result in a profit of $86,000 per unit.

A more likely scenario would not be $2.25 per square foot rent. In most cities, it would involve rents averaging $1.70 per square foot, a low occupancy, and a less aggressive capitalization rate used to determine a sales price. After changing these variables, it would be difficult to achieve a sale resulting in any profit.

Most cities—with the exception of Washington, D.C.; New York; Boston; Los Angeles; San Francisco; Chicago; and a few others—cannot achieve those numbers in rental projects. Even if they could, the profits are much higher with for-sale developments. The economic factors inherent in for-sale mid-rise or high-rise projects are the same as those for rental projects, but the construction costs are a little higher as shown in Table 2. A profit of $83,124 per unit on 200 units results in a $16.6 million profit for the building.



The Parc at Gateway Condominiums, Salt Lake City, Utah.

TABLE 2. FOR-SALE DEVELOPMENT (200 TOTAL UNITS)

Land:	100 units per acre @ $60 per square foot; Land per unit cost $26,136
Construction cost:	$215,000 per unit ($165 per square foot)
Soft costs:	$16,900 per unit
Subtotal cost:	$259,036 per unit ($199 per square foot)
	Marketing and commission @ 6 percent = $21,840 per unit
Total cost:	$280,876 per unit

Mid Rise Versus High Rise

One way to make a mid-rise apartment project pencil out is to keep costs down. First, if it is around $75 per foot for a mid rise versus $150 per foot on a high rise, but you would still achieve $112 unit per acre on a "wood frame" project, you would end up with almost high-rise density at low-rise costs. For example, Toronto-based FRAM Building Group is developing a 204-unit, high-density, mid-rise five-story project on a high-rise site in the heart of downtown Dallas, next to rapid transit, shops, and restaurants—the first new apartments developed in Dallas's downtown area in 20 years. Targeted to young urban professionals, the building contains smaller units and achieves higher density by locating parking for the retail and residential tenants below grade. Although the below-grade parking option was more expensive, FRAM was able to double the density of the project, from 57 to 113 units per acre. The project just started leasing at a rate of ten units per week.

Mid-rise projects usually comprise 60 to 100 units and are five to ten stories tall. Their smaller size lowers some costs, shortens delivery time (as well as the contractor's fee), and reduces overall construction costs by 15 to 50 percent.

If land cost is a factor, the solution is to build upward—and the views as a result are better, too. This approach quickly offsets the additional construction costs by dividing the land cost by a higher number of units. This usually works in most locations. The California office of Humphreys & Partners was recently contacted by a developer in Irvine who wanted to design a four- to seven-story mid-rise project. His land costs were $45,000 per unit and he was planning on building 40 units per acre. We pointed out that if the height of the project was increased to 20 stories, the units would have views of Newport Harbor and Catalina Island. The economic criteria used in the analysis are listed in Table 3.

For an additional $20,000 per unit in overall development cost, the developer would be able to offer views of the Pacific Ocean and the mountains versus no view at all. The rent or sales price would easily push the value higher by $150,000 per unit. Sometimes rents or sales price cannot be achieved in a high rise, in which case a mid rise is the way to go. However, if extraordinary views are a possibility, then it is worth analyzing the feasibility of building upward.

TABLE 3. IRVINE, CALIFORNIA, PROJECT, 1,000-SQUARE-FOOT AVERAGE:

	Low rise: 40 units per acre	High rise: 160 units per acre
Land:	$45,000	$11,000
Construction cost/unit:	$120,000 ($120 per foot)	155,000 ($155 per foot)
Soft costs:	$20,000	$40,000
Totals:	$185,000	$206,000

The Carlyle, Minneapolis, Minnesota.

Efficiency and Construction Costs

Construction costs play a major role in deciding whether to build a mid-rise or high-rise project. Mid-rise projects tend to be boutique projects, which are smaller in size. As such, costs are lower because lifting time is less, floor plates are bigger (i.e., more can be done on one floor instead of going up and down floors), and pressurization and fire rooms are not required. Shafts are much smaller, windows can be cheaper, and the structure is simpler. However, this is all achieved at the expense of lower density and losing views. Construction costs played a very important role in a new project in Minnesota, a site located between downtown Minneapolis and the falls on the Mississippi River. The site is situated two blocks away from trendy outdoor dining, next to clubs and a pedestrian mall. Very early on, the decision was made to maximize the site and the views by going up 39 stories—the maximum height that the developers believed the city would allow.

After some preliminary designs, the construction company provided its construction numbers to the developer, who expressed his concern that total development costs were equal to the projected sales price. The cost of the project therefore had to be cut. In a previous project for this developer, Humphreys & Partners designed a post-tension building that was quite successful, but costs were lower three years earlier and the site was not as small. With the new site, almost all the parking had to be below the building, whereas the previous project had a freestanding garage on site. The efficiency of constructing a garage under a building drops dramatically when it is compared with the efficiency of a freestanding garage. (The number of parking spaces per square foot of garage drops because of columns coming down from the building above. This makes for a more expensive garage when a building is on top of a garage.)

Increasing the garage efficiency helped some, but not enough. An idea brought to the developer by HPA was tunnel form, which is a slip forming system that provides a structurally stronger building, faster construction time, and lower construction costs, albeit at the expense of flexibility—tunnel forms require load-bearing walls, which are mostly solid concrete walls with minimal openings, placed every 24 feet. The new construction numbers showed that the project was now financially viable. One reason for the financial feasibility is that the design saves about one-third of the gypsum board needed for the project, and therefore about one-third of the walls are created for the same price as just getting floors in post-tension construction. The greatest savings are realized through the faster construction time for the system. A post-tension slab takes about seven to ten days to form, pour, and take down the forms. Tunnels can be completed in three days, from start to finish. If crews work on Saturday, they can conceivably complete two floors a week versus one floor every ten days with post tension, saving about ten months of construction time in this particular case. Reducing construction time significantly lowers carry costs on the loan and—more important—generates significant savings on general conditions, by shortening the time the contractor is on site.

In high-rise developments, the efficiency of the building is usually the key to economic success. There are many efficiencies to examine, among them the building's skin and the ratio of common area to sellable area. The skin is the most expensive part of the structure, easily falling in the $25 to $35 per-square-foot range for glass and precast construction. If a building has too many ins and outs in the facade (i.e., too many corners), the skin cost will get too high percentage-wise. (The linear area of the building gets too high.) Forty percent of floor area is generally a very good number to target for the skin.

Another big efficiency item is the common area. It is not unusual to see a building in which about 20 percent of each floor is used for common area—in other words, an 80 percent–efficient building. Almost everyone targets an 85 percent–efficient building. Even at 85 percent, significant dollars can be recaptured. Grant Park, a 27-story high rise in Minneapolis designed by Humphreys & Partners, featured a new idea in floor plates—no corridors. The design replaced a 120-foot-long corridor with two elevator lobbies joined by an unfinished utility corridor, which connected the exit paths.

The corridor was narrow, increasing the efficiency from 85 to 89 percent. The use of two elevator lobbies instead of one long corridor made the building much more attractive. Since the corridor and finished units cost the same to build, every square foot of space that was moved from the corridor to a unit represented no additional construction cost. According to the construction company, each 1 percent of efficiency saved resulted in $1 million in construction savings, for a total savings in construction costs of $4 million. The developer, Bob Lux, principal of APEX Asset Management, based in Minneapolis, points out that since sales price is almost double construction cost, the construction savings actually translate to an additional $8 million.

Maximizing the economic benefit of developing a mid-rise versus a high-rise multifamily building involves a complex equation that depends in large part on the building site, its surroundings, and its design. It is important for a developer to look at all the options and understand how to make the most of a site before moving ahead with a project.—**Mark Humphreys,** *CEO of Humphreys & Partners Architects, LP, in Dallas, Texas*