

The Parking Crunch Myth

The Reconfigured Office Is Affecting Parking Issues, But Is It As Bad As Everyone Believes?

While changes in the organization of office space can lead to many benefits, an fm must not forget about subsequent effects on a facility's parking—which can sometimes be a little less flexible (since cars aren't especially responsive to open plan environments).

Some people predict that, as alternative office arrangements such as

telecommuting and "hoteling" increase in popularity, parking pressures will subside to some degree. Others anticipate the opposite. They envision a "sardine effect" occurring in parking lots as organizations squeeze employees into smaller work spaces to save money on real estate and associated overhead costs. (For instance, between 1992 and 1997, Ernst & Young has cut employees' working space from 300 square feet a person to 160 square feet, according to the March 30, 1998 *Monday Morning*

Quarterback, a newsweekly of the contract furniture industry.)

For the moment, the latter trend seems to be the more pervasive, and there's much discussion about the need to provide greater numbers of parking spaces per square foot of office space. But how great is this need? And how much should parking design philosophies be rethought? First, it's necessary to examine the factors that influence how parking demand is assessed and determine whether the needs of office building parking space have truly changed over the last few years.

Parking Demand: The Secret Formula

Many fms assume parking demand is a correlation between the number of employees and the size of the building. Given a specific size of an office building, fms could predict peak parking demand during the busiest hour, according to landmark studies in the mid 1980s conducted by the Urban Land Institute (ULI) and the Institute of Transportation Engineers (ITE). Both studies provided base correlation ratios. Nevertheless, there are more elements involved in determining office building parking demand besides a simple correlation.

Thus, planners, zoning boards, and developers use a mathematic formula to determine the base ratio established for office buildings. This formula includes adjustment factors which tailor the ratio for specific conditions. (For the full formula, see Chart A on the opposite page.)

This general formula makes an accurate prediction of parking demand because it takes into account the following elements:

1. The correct occupied floor area of the building. It is important to identify whether the square footage used in the calculation is GLA, gross floor area, net leasable area, etc. In the aforementioned equation, parking demand is expressed in terms of GLA.

The *Dictionary of Real Estate*, published by John Wiley & Sons, offers these definitions:

▲ GLA: a building's total floor area, in square feet, designed for tenant leasing. The GLA is normally calculated

from the outside walls to any existing room partitions.

▲ Gross floor area: the total floor area of a structure, in square feet, measured from the outside walls not adjusting for the actual interior useable area.

▲ Net leasable area: the floor space in a building that is actually under lease. Net leasable area is all the leasable area of a building exclusive of non-leasable space such as hallways, building foyers, areas devoted to heating, air conditioning, elevators, plumbing, and other utility areas.

2. The percentage of employees who drive cars. This number can have a significant impact. Consider Orlando, FL, where approximately 98% of employees drive vehicles, versus parts of the Washington, DC metropolitan area, where fewer than 50% of employees drive.

3. The density of employees within the building. Office space densities can vary significantly resulting in difficulty creating accurate parking needs estimates. For example, a detailed study of Houston, TX offices in *Office Space Demand* by Wade R. Ragas, showed a wide range in employee density across different types of firms. While architecture and engineering firms provided only 228 square feet per worker, petrochemical production firms' offices averaged over 561 square feet per worker.

Even within a category there can be noticeable differences. Offices located in central business districts tend to allocate more space to each worker than similar offices in the suburbs, according to the study. This is particularly true for "prestige" offices that are likely to serve as meeting places for clients. For example, image conscious corporate law firms in central Houston devote more space to entry areas, conference rooms, and libraries than suburban firms. They average 372 square feet per employee, while suburban firms trim back to as little as 301 square feet per employee.

More Space Needed?

The intricacy of calculating density revisits the question of recent changes in

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The formula for making an accurate prediction of parking demand (GLA is gross leasable area):

3.00 spaces/1,000 square feet GLA

x square feet occupied GLA

x percent who drive

x the density adjustment factor

= PARKING DEMAND



space utilization. Do today's office buildings generate higher levels of parking demand than they did 10 years ago? At first glance, it appears so.

"[Old] parking ratios seem to be not adequate in a lot of buildings," cites a real estate broker in a December 5, 1997 article. "The Incredible Shrinking Office: Parking Woes Hit Suburbs" in the *San Francisco Chronicle Real Estate Quarterly*. Another broker quoted in the article says some businesses were in need of six or even eight spaces per 1,000 square feet, while average ratios in the area were only four per 1,000 square feet.

This echoed an earlier article by Ann Carns in *The Atlanta Business Chronicle* that noted, "Cost conscious companies squeezing more employees into office buildings are finding that standard parking ratios are inadequate. Meanwhile, rising office occupancies and a lack of office construction are adding to what one executive calls the sardine syndrome." ("Squeeze Play: Tenants Feel The Parking Pinch," September 1995.)

Recent studies by Indianapolis, IN-based Walker Parking Consultants of older office buildings that have been renovated to accommodate increased densities reveal that changes have resulted in parking demands well above what the buildings were originally intended to handle. One financial company with 8.5 employees per 1,000 square feet cited another corporation who was seeking to use space at the rate of 7.6 employees per 1,000 square feet.

Another example comes from a large midwestern development company that contemplated estimating parking supply for new projects in suburban locations at 6.67 spaces per 1,000 square feet of GLA to match the demand for money-saving high office densities. But in reality, the company's recent projects haven't required such large parking allocations.

In fact, despite the amount of attention and news coverage given to the "parking crunch," office density and overall parking demand haven't changed dramatically in recent years. The primary and secondary data collected by Walker suggests that while densities are increasing for some buildings, most

buildings require the same number of parking spaces they did 10 years ago.

Parking Demand In The 1980s

When the ULI and the ITE conducted their landmark studies of parking demand in the 1980s, they found parking demand ratios of 2.5 to 2.79 spaces per 1,000 square feet, respectively. Another lesser known study by N.S. Kenig in 1982 surveyed over 130 buildings and came up with a ratio of 2.66. Allowing for a comfortable margin, ULI recommended allocating parking at 3.0 spaces per 1,000 square feet.

If office density during the 1980s is estimated from these numbers—assuming that parking ratios represent a driving ratio of 98% and a presence factor of 85%—a range of 3.0 to 3.4 workers per 1,000 square feet is found.

This estimate was reinforced by a 1986 nationwide survey by the Building Owners and Managers Association International (BOMA). The BOMA survey found an average of 3.6 workers per 1,000 square feet nationwide.

Contemporary Data

Have densities really doubled since then? Certainly there are a number of examples of densities in the 6.00 to 8.00 range, as Walker's studies and newspaper anecdotes have shown. But overall, things seem to be much closer to the status quo than the recent flurry of concern might suggest. In the latest studies, the majority of buildings have had densities under 3.5, and corresponding parking ratios calculate to under 3.10.

Other studies have echoed these findings. A 1996 survey of 24 buildings in the suburban Washington, DC area found an average density of 2.89 workers per 1,000 square feet gross floor area (GFA is usually 110% to 115% of GLA; the 2.89 ratio would correspond to a range of 3.18 to 3.32 in GLA).

In 1995, researcher Richard Willson studied parking usage at five sites in the Los Angeles area and found an average parking supply of 3.8 spaces per 1,000 gross square feet, with peak parking utilization of only 56%. For this kind of parking demand to occur in an area like suburban Los Angeles—where public

transportation is limited—worker density isn't too much higher than actual demand. It's probably about 2.5 workers per 1,000 square feet, if adjusted for absentees, driving ratios, etc.

Today, the most significant data about office worker density ratios comes from BOMA, which conducts comprehensive annual surveys. BOMA's 1995 data for 2,387 private sector buildings shows an average of 292 square feet per worker, or 3.4 workers per 1,000 square feet. The average for 182 government buildings is 250 square feet per worker, or four workers per 1,000 square feet. The square footages per worker are actually higher than they were in the 1980s (258 square feet per worker for the private sector in 1985).

An analysis BOMA performed by location (downtown vs. suburban) also showed increasing space per worker: downtown buildings averaged 254 in 1985 and 289 in 1995, while suburban ratios rose from 269 to 295. In a survey where the same group of buildings was tracked over a five year period, square footages per worker rose slightly between 1991 and 1995—from 279 to 286 in the private sector and from 202 to 225 in the public sector.

Clearly, whatever trend exists with regard to increased densities has not yet become the prevalent direction in facility management. There is certainly anecdotal evidence supporting the idea that some work spaces are going to get tighter and that parking demands per square foot will rise accordingly. But so far, the evidence given is more indicative of isolated incidents than a major trend. In other words, studies from various sources are not definitively reinforcing the "sardine effect" theory.

Finding The Right Balance

This is not to say observations of the "incredible shrinking office" should be discounted. On the contrary, fms should be cognizant of the possibility that parking for their buildings will have to be configured for more office workers than the old 3.0 ratio would accommodate. However, fms should be equally careful to avoid jumping on a bandwagon that doesn't exist; planning parking at a rate of 6.0 spaces per 1,000

square feet of GLA can be costly and wasteful.

More than ever, parking design in the future will depend more on individual local adjustment factors and less on one-size-fits-all-ratios. Increased worker

(Continued overleaf)

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density is only one trend to consider in adjusting parking ratios; other recent developments—telecommuting, office sharing or hoteling, and carpool/public transportation initiatives—also change the relationship between the total number of employees and the number of cars on-site. In these cases, ratios might be lower than traditional equations would estimate.

For example, firms in Los Angeles that instituted the city's "cashing-out" program—whereby employees were offered cash incentives to car pool—saw the number of solo drivers decrease by 17%, according to Donald Shoup in "Evaluating the Effects of Cashing Out Employer-Paid Parking: Eight Case Studies." (The article can be found at <http://parking.wbinet.nl/umn/library/publications/D.C.Shoup/0002/0002.htm>) In cases like these, the standard

assumptions would not produce the best results.

Though it's not yet clear how extensive various types of alternative officing programs will become, it's likely they will have some impact on certain niches. Therefore, fms would be wise to consider those instances in their future plans.

Consider The Alternatives And The Area

While claims of a radical shift in office density and parking demand may be exaggerated, there is reason to expect the variety of space planning practices will become greater. Thus, considering case-by-case parking adjustment factors will become more important. As parking conditions for projects are assessed, fms should consider several points when making adjustments for office density and local factors.

Fms first need to consider the possibility of alternative office management plans. Industries where workers are likely to be out of the office frequently—accounting, sales, etc.—are most likely to consider office sharing and hoteling. These types of companies may employ many people, but don't necessarily need as large a number of spaces.

Before fms finalize parking plans, they should also determine if transportation initiatives are being planned either by the city (e.g., the cashing-out program being promoted by Los Angeles) or by the company (carpool incentives, etc.). Cities with heavy traffic congestion and/or expensive land are the most likely sites for such action. In places where it's less expensive for the building owner or company to provide parking for employees, carpool initiatives are unlikely to be a priority.

Finally, fms need to consider the difference in ratios across geographical areas and types of businesses. BOMA and the Real Estate Center Study both provide important information on average space usages for different types of offices, along with comparisons across regions. (Office densities are obviously not the same in New York City, NY as they are in Albany, NY.)

Reducing Parking Shortages

For building owners or managers, nothing is more frustrating than finding their parking lots and/or garages overcrowded. There are, however, several options which can ease these parking blues.

Employers can encourage carpooling with other employees rather than driving alone, and cash incentives are a good way to make such plans worthwhile for everyone involved. As mentioned earlier, the program in Los Angeles reduced solo driving by 17%—a valuable statistic for those companies who pay for parking on an employee-per-car basis.

Another strategy is for building managers to discourage reserved parking. If someone with a reserved space is not using it, no one else can either. This

results in numerous spaces sitting vacant on any given day. If spaces are assigned on a monthly basis—or not at all—managers can count on available spaces that can be used to accommodate daily traffic.

Restriping parking structures to accommodate smaller cars is another option in reducing parking shortages. Old, wide stalls can often be made smaller and more efficient by re-angling the spots, especially when fms compare compact cars to their oversized, outdated counterparts of the 1960s and 1970s. Though more expensive than restriping, re-configuring the entire parking area can result in additional space and

may be worth considering.

Managers can also consider leasing space from nearby properties that have little workday traffic (i.e., restaurants, retail complexes, etc.). Employees using these spaces can then be shuttled from satellite lots to the office. And finally, as a last resort, building owners may need to consider adding parking decks to existing lots.

From shrinking office size to telecommuting and office hoteling,

organizations are re-inventing the office environment to meet ever-changing business requirements. To keep pace from a parking facility perspective, it's important for organizations to understand the dynamics of parking demand and how it affects their individual work force needs. Through critical assessment, companies can identify potential parking problems and develop appropriate solutions efficiently and cost effectively. **TFM**

—John Dorsett

Dorsett is a principal for Walker Parking Consultants, headquartered in Indianapolis, IN. He is responsible for the production of parking planning and economic feasibility studies on behalf of Walker's clients. He previously authored "Price Tag Of Parking," in the February 1998 issue of Today's Facility Manager. For more information on parking lot design and management, call Walker at (317) 842-6890.

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