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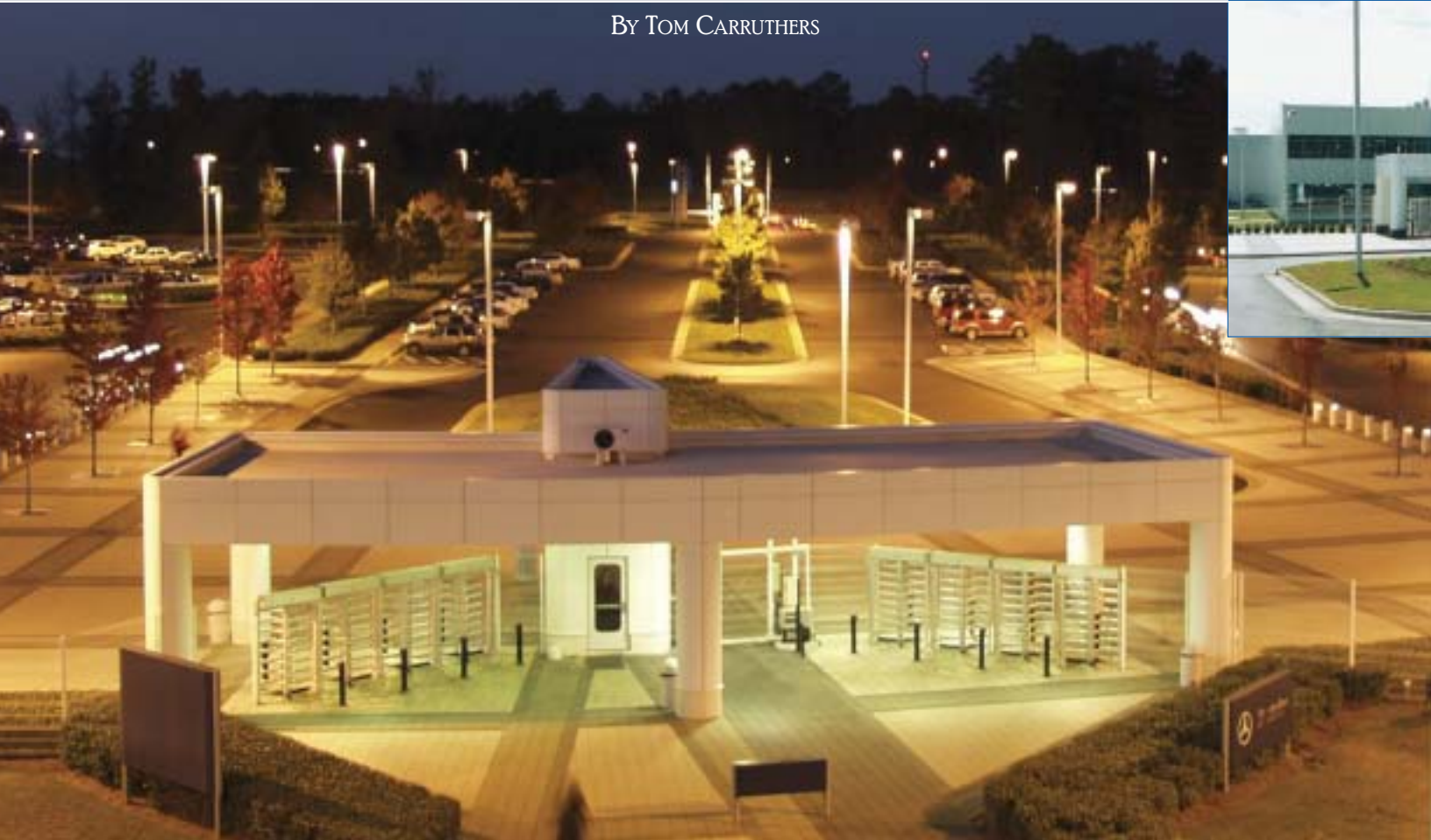
Site Selection for the **Automotive Sector**

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SITE SELECTION for the AUTOMOTIVE SECTOR

BY TOM CARRUTHERS



Automotive projects have been big news ever since Ford introduced the assembly line to the automotive production process, but the last ten years have seen the greatest U.S. investment in the automotive sector ever. Site selection consultants have been busy working with European, Japanese and Korean automakers and their suppliers for the last decade to locate new plants in the U.S. in order to serve the U.S. market, far and away the largest market in the world.

While the role of a site consultant is quite basic – simply to find the site that has the lowest combination of capital and operating cost associated with it – the job that is required to find that site, particu-

larly with respect to an automotive project, has become highly complex, and in all likelihood will continue to become more complex as time passes. This article will attempt to address many of the issues that should be analyzed when one is hunting for a site for a new auto project.

An argument can be made that in a perfectly efficient world the capital cost for a new automotive assembly plant (after incentives have been factored in) should be identical from one site to another, regardless of the location. In theory, any difference in capital costs of one site versus another should be eliminated by using incentives to offset the difference. For example, if Site A in

State A has a capital cost associated with it of \$100 and Site B in State B has a capital cost associated with it of \$150 then State B is strongly motivated to provide at least \$50 in incentives for the project. To the extent that State B provides in excess of \$50 in incentives then State A is motivated to match that excess. This bidding process might go on until one state or the other reaches its limit based on its own cost/benefit analysis, but in a perfectly efficient world both states will reach this point of maximum assistance at the same time.

For numerous reasons the above argument cannot be relied upon, not the least of which is that we live in an economy

that is far from efficient; and consequently, the capital costs associated with a site are in fact very important (although as will be discussed later, not as important as the operating expenses). The cap-

aming core samples on that portion of the site where the buildings are expected to be built. It is important that civil and environmental engineers carefully analyze the site to determine where the buildings

sis, can only be controlled by producing more units. As an example, if a new plant costs \$1,000 and the annual debt service on this \$1,000 is \$100 then the cost per unit is \$100 divided by the number of units produced – the more units produced the less this number will be. The impact of this is that, while it is important to minimize the initial capital cost, once it has been spent it is what it is. Operating costs, such as materials, labor, overhead, utilities and so forth, can be controlled on a daily basis with good management.

There are many categories of operating costs, but those operating costs that can vary from one site to another generally fall into three major categories: labor, transportation and utilities (and generally in that order of importance). It is the site



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ital costs associated with a site generally fall into the following categories: land, site preparation, geotechnical conditions, access, utilities, and environmental.

Automotive assembly plant sites are usually at least 1,000 acres while Tier I, II and III suppliers typically require ten to 100 acres of land. Raw land values vary dramatically from one location to another, and it is generally the case that, all else being equal, relatively inexpensive land has higher development costs than relatively expensive land. It is important to evaluate all of the costs of developing a site and not just the land cost because these other costs can far exceed the land cost and a poor (and inexpensive) site can become more expensive than a superior site with a high initial dollar cost.

It is generally the case that the greatest unknown in any site search is the geotechnical conditions of a site. While some areas of the country have fairly uniform subsurface conditions (and in those areas this may not be as big a consideration) many parts of the country have subsurface conditions that, across the expanse of a 1,000-acre site, can vary significantly and present problems and additional unexpected cost when foundations are being constructed. It is wise to take the extra time and money during the due diligence phase of a site search to thoroughly examine the geotechnical conditions. This process involves obtaining and ex-

are likely to be built based on such factors as site work, access, the location of natural features such as wetlands and streams and so forth. The number and location of the core samples will depend on the expected conditions, the size of the buildings and the type of loads that the foundations must support.

The efforts made throughout a site search to minimize capital costs are important because of the finite level of incentives available on any one project. States and local governments have only so much money that can be allocated to incentives for any one project (based on a cost/benefit analysis). To the extent that incentives, which are designed to reduce capital costs, can be minimized then more incentives can be targeted towards operating costs. And it is operating costs that most companies focus most of their attention. Operating costs are given more attention because most of these costs are variable in nature and can be controlled and managed. In contrast, the initial capital cost of a new plant becomes a fixed cost, and on a cost per unit produced ba-

consultant's job to find the one site that minimizes these costs. The specific location of an automotive plant has almost nothing to do with sales volume, pricing and revenues, but it has much to do with cost and operating margin.

One reason we have seen so many new automotive projects locate in the southeastern region of the U.S. is that this region offers a combination of lower labor costs, lower transportation costs and lower utility costs than other regions of the country. Historically, the Southeast has lagged the rest of the nation in salary and wage levels. Although the trends are positive for much of the Southeast this discrepancy in pay levels remains a motivating factor for those looking to locate a new project, especially one that requires a large work force such as an auto assembly plant. Furthermore, the level of union activity in the Southeast has been historically less than in many other parts of the country. Most of the southeastern states are "right-to-work" states, and companies whose workers are not already organized (which include most of the

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foreign auto companies) feel safer locating a new plant in those areas that have less union presence.

Pay scales for auto assembly plants tend to be on the upper end (whether unionized or not) and consequently these projects attract large numbers of applicants. Most qualified applicants already have jobs paying decent wages and their goal is to move into a higher pay scale. The job of the site consultant is to analyze the current pay scale for those jobs with certain skill sets and determine the level of pay that will attract the most qualified workers. Machine operators, electricians, maintenance mechanics, foremen, and laborers are all typical categories of workers with the needed skills to work in auto plants.

In addition to hourly workers, auto plants employ many managers and engineers. It is common to find that an auto plant will have a close relationship with a local university, particularly the engineering department, in order to attract new hires and to partner on research. Consequently, one of the many site selection requirements that may be important is proximity to a college or university with an engineering program.

Transportation costs are a significant line item expense to auto manufacturers for both inbound supplies and outbound finished product. Transportation costs are directly related to proximity which is one reason so many suppliers have located their plants in close proximity to assembly plants. Proximity to the ultimate market is also important, but this cost can to one degree or another be passed on to the consumer. Most inbound transportation of supplies comes via truck and quite often is done so on a "just-in-time" like schedule. Finished automobiles are shipped out by both truck and rail. It is important for an assembly plant to have access to rail, if for no other reason to provide a competitive alternative to trucking.

With respect to transportation costs, the site consultant may be asked to determine where the theoretical lowest cost site is located. This theoretical location will be based on a large set of input data such as the location of existing suppliers, the anticipated location of new sup-

pliers, the location of major markets throughout the country, the location of ports for the export market and so forth. This data and the cost associated with transporting to and from these locations is modeled using regression analysis to determine the centroid for lowest transportation cost. A more detailed analysis will result in a map showing the cost at any location. While this sort of analysis is inherently inaccurate and is out of date almost the day it is produced it primarily gives one a perspective on which areas are likely to result in less cost and which areas are likely to result in higher transportation cost. The relative differences from one location to another are more important than the absolute numbers.

Population growth rates between 1990 and 2000 were highest in the western states (19.7 percent), but in terms of absolute numbers of people, the southeastern states have the largest population (100.3 million in 2000) and saw the greatest increase in population. During this time period, the population in the Southeast increased by approximately 14.8 million compared to 10.4 million in the West, 7.9 million in the Midwest and 2.8 million in the Northeast. Among the fastest growing areas are Atlanta, Florida, the Houston-Dallas-San Antonio triangle and North Carolina. These statistics tend to drive certain site location decisions, particularly those where transportation costs are a significant part of the total cost structure. It should be the case that the auto company's marketing department knows a great deal more about this type of data than the site consultant, but it is important for the consultant to be aware of the demographics that drive the sales side of the equation because it has an impact on the transportation side of the cost structure.

All new automobile assembly plants attract any number of suppliers who desire to be located close to the plant. Some of the majors want their suppliers to be located within a certain distance or time from the plant, i.e. no more than 30 miles or no more than a 30-minute drive. Other companies want their suppliers to be located within a range that is no closer than a certain distance and no further than some greater distance. Both of these type

requirements stem from a combination of transportation cost issues, just-in-time issues and overlapping labor pool issues. It is important that the state and local governments (those providing incentives) understand the company's *modus operandi* about supplier locations because the spin-off jobs associated with supplier plants may play a large part in the cost/benefit analysis that is used to determine the level of incentives (both at the state level and at the local level). In the event the preferred site is located close to the state line many of the supplier plants may elect to locate in the adjacent state. In addition, the city or county that lands the big assembly plant (and is expecting a large number of suppliers) may be disappointed when the suppliers all locate an hour's drive away in other counties.

Some of these same location considerations discussed above must also be taken into account by the site consultant. The consultant must be aware that a site close to a state line may not warrant as large an incentive package from the host state as might be available were the site further from the state line. A plant built close to the state line will attract employees from across the border and some of the wages paid by the plant will be spent across the border. Both of these events serve to reduce taxes that can be directly attributed to the new plant and consequently reduce the level of incentives that may be offered. While it is rare that incentives drive a deal, if all other things are equal, then the site with the better incentive package is likely to win.

In summary, site consultants, whether they are in-house real estate managers or outside consultants, must consider a wide array of issues and endeavor to analyze numerous cost related factors when deciding where to locate a new automotive plant. As was pointed out at the beginning of this brief description of site selection for the automotive sector, the role of a site consultant is quite basic: simply to find the site that has the lowest combination of capital and operating cost associated with it. However, getting from the conceptual stage of needing additional capacity to the closing table is, and justifiably should be, a highly complex and challenging process. **T&ID**