

A prototype can shorten design and construction schedules and offers predictability in construction methodology, construction costs, schedules, facility maintenance and operations.

By Christopher R. Larson and James E. Megerson

Certain flexible prototype aspects needed for timely store building

For the design and construction departments of national retailers, implementing a store prototype design can make a significant difference toward expediting design time and standardizing store construction.

Though the term prototype can take on a variety of meanings depending on who is using it, a prototype, as used in the retail construction industry, is a set of documents that describe a standard design and construction delivery method that is easily replicated, especially for national expansions or rollout programs. A prototype can shorten design and construction schedules and offers pre-

unique operations, and the degree of flexibility provided in the design, is different for every retailer. Other conditions that affect the application of a prototype include geographic location, site conditions, existing systems and specific real estate constraints.

In manufacturing, a prototype can be a first-run production of a part or product. It is made to ensure that the design and the quality of production meet expectations. Once an acceptable prototype has been produced, it is replicated through mass production. In retail construction, a prototype is rarely built first to make sure that the design can be carried forward as expected. Most prototypes are created through experimentation, though the experience of the owner and designers help streamline this process. Time is usually of the essence, so drawings and specifications are used to mass distribute a standard design philosophy in order to optimize design time, construction bidding and implementation.

A certain amount of flexibility must be planned for in the prototype design as it often

seems there are more variables than standard elements to deal with. For example, the site or property can have a dramatic impact on the store's heating, ventilation and air conditioning capacity requirement. Solar heat gain on the building can be dramatically different for each direction the prototype store might face. This is especially a concern when the storefront has a large amount of vision glass.

In theory, a pad site prototype design would have to be developed for each specific orientation unless there is a design tool that can quickly evaluate the loads and make appropriate adjustments to tonnage, airflow, equipment selections, electrical distribution, etc. Another variable with a similar effect is geographic location. Weather data and altitude have significant impact on the cooling and heating systems selected for in a building. The HVAC provided for a store that is built in Florida will likely be quite different than the same store that is built in Arizona, Colorado or Wisconsin. As a result of those differences, the sizing of other systems such as the struc-

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There are many variables that affect the application of a prototype and each company has its own unique set. The type of retail sales concept, changing business trends,

ture, natural gas piping and electrical distribution systems are impacted. The impact can be dramatic enough to require several prototype versions to cover the different climatic and geographical conditions to be encountered.

The type of retail business served by the prototype is obviously a significant factor in design. Banks or quick-service restaurants, for example, have very different demands than other retailers, as drive-thru windows could be required for these prototypes, necessitating left-hand and right-hand prototypes reflecting different parking and site lighting conditions. A mall retailer is cognizant to adapt its plans and specifications to fit the requirements of mall spaces, which might have been occupied and altered many times by a multitude of tenants. Retailers selecting an urban location in an existing building for their stores often have to alter their designs so much that it is almost unrecognizable as a standard plan.

A true prototype accelerates and homogenizes design, building permit procurement and construction processes. It communicates to the contractor any national purchasing agreements that the owner may have engaged, which can reduce cost and delivery times. It prevents omission of details and preferred construction methods. It can even make

implementation easier for project managers and purchasing personnel.

There are advantages to developing a very specific prototype as demonstrated by a national quick service restaurant chain utilizing a pad site development plan. Both left- and right-hand prototypes were developed as well as multiple geographic adaptations to cover as many different scenarios as possible. This chain rolled out more than 3,000 units over a three-year time period. To

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streamline and expedite the design process, each plan incorporated designer notes or "notes to engineer/architect" that explained how the owner wanted specific elements to be incorporated into the site adaptation to the respective designers.

The prototype was so well developed that in many cases the only modifications needed on the plans were a rotation of the north arrow and a new address in the title block. While this type of prototype meant higher initial design costs due to the extra time spent developing numerous options, the rewards were quick completion of construction documents for each site and a standard develop-

ment package for all 3,000 stores. Minimal modifications to the plans reduced the overall design cost for construction documents over the life of the expansion program. Regular updates to the prototype were planned to reduce ambiguities and subsequent change orders.

Although many retailers and their design consultants refer to their standard document templates as a prototype, it is actually more of a criteria set or a go-by set. It is possible

to develop a set of less specific construction documents to help accomplish most of the goals of a prototype. For retailers who build in malls or strip centers, a set of design guidelines can be developed to meet most of the goals of a prototype. This is even more effective if a standard prime real estate target has been developed. A kit of parts can be developed that communicates standard details for cash wrap design, HVAC, plumbing and electrical components. It may be otherwise difficult to develop an all-inclusive prototype for this type of retailer because of the variety and constraints of mall spaces.

It is recommended that

mall tenants set up a criteria set that has standard details developed for the most common occurrences. Create a standard layout for designers to use as a go-by. Flexibility in the standards allows design consultants to get the development package on the street sooner.

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Before undertaking the development of a prototype, great effort should be taken to make sure all parties agree to the goals and expectations of the final product. Remember that regardless of the venue for store development, there is a creative and innovative prototype solution that can meet most of the goals for a successful national roll-out program. **R**

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