

Lifestyle Market Research for the Design of Production Houses

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Abstract

Production home building companies infrequently invest in primary consumer market research. In the unusual instances when home builders do conduct consumer research the results rarely inform the design of prototype houses, but instead, tend to inform home builders' marketing and sales processes. Therefore, home building companies reduce the possibility of achieving a high level of congruence between their target home buyer markets and their house designs. This case study illustrates the potential of consumer research to inform design through tracing the development of a unusual lifestyle market research project that does, in part, guide the design of a builder's prototype houses.

The lifestyle market research project results in prototype house designs that cater to the builder's target buyers as well as results in an increase in the builder's sales velocity. The analysis of the case study demonstrates that the survey statements most informative to the prototype house designs concerned the home buyer's use of the house, whereas those statements that concerned the home buyer's aesthetic tastes, emotional needs, or preferences for the physical structure tended to inform the builder's marketing and sales processes.

Introduction

Few production home builders invest in primary consumer market research and rarely in consumer research that guides the design of their prototype houses. Instead, home builders more typically conduct reactive, descriptive surveys of their competitors' products or refer to secondary sources. These secondary sources include the leading industry organization's national preference surveys (National Association of Home Builders, *Professional Builder*, or *Builder*) or the commercially available psychographic or geodemographic surveys (such as VALS or PRIZM). When home building companies do conduct primary consumer market research, the most common methods include post-occupancy customer satisfaction surveys, model home exit interviews, and product testing in focus groups. The results of these methods tend to primarily inform marketing and sales processes instead of architectural design.

By infrequently conducting primary consumer research, production home builders reduce the possibility of achieving a high level of congruence between their target home buyers markets and their house designs. This is significant because home builders rely upon high levels of customer satisfaction for referrals from their home buyers to prospective buyers.

This case study presents an unusual example of a lifestyle market research project that resulted in home buyer market profiles that proved informative for the builder's prototype house designs. Not only did the research results provide the builder with the ability to target a home buyer market with house designs that catered to their preferences but it also enabled the builder to reposition in the market and resulted in an increase in the builder's sales velocity.

Research Method – Case Study

The primary purpose of this case study was to determine the characteristics of the consumer market research results that most informed the design of a builder's prototype houses. In order to document the development of the project, the case study method was used since it is the most appropriate method for descriptive research of current, real world phenomenon. The case study traces a lifestyle market research project conducted for a home builder from its initial conception to the implementation of the results.

Several industry members recommended investigating American LIVES, Inc., a consumer market research firm who specializes in researching home buyers' lifestyles for the subject of this case study. Although other firms were considered, after several discussions with LIVES's President

and founder, Brooke Warrick, it was concluded that LIVES's research results did prove useful to house designs and therefore their work was selected as the subject of this case study.

LIVES, Inc. has conducted numerous home buyer market research projects, but of the most recently completed projects (only recent projects were considered so that the participants could easily recall the case facts), Brooke Warrick suggested the Maracay Homes project because he believed that the results of the research had informed design. The Maracay Homes project was also selected because it gained industry recognition when the project was chosen to be presented at one of the leading management consulting events for home builders, the Lee Evans Presidential seminar, in 1999.

In order to gain multiple perspectives of the project, I interviewed the consumer market researcher, the builder, the marketing and sales expert, and the lead designer. The individuals who participated in this case study were; Brooke Warrick, the President of American LIVES, Inc.; David Bessey, the President of Maracay Homes; Rick Heaston, the President of a marketing and sales consulting firm for home builders; and Howard Pals, the regional Vice President of Bloodgood Sharp Buster, who led the design team.

The primary sources for the case facts were structured telephone interviews (questions were sent to the interviewees prior the conversations) with the four participants. The interviews were limited to the telephone primarily because the participants all resided in different locations (California, Arizona, and Colorado). Critical sources of primary literature included LIVES's Market Opportunity Analysis report for Maracay Homes, dated December, 1997 (referred to as LIVES, Inc. 1997), Maracay's "History and Development" report (no date), Rick Heaston's Design Brief, and the sales and marketing literature for Maracay Homes' communities.

Once the case facts were recorded, they were distributed and reviewed by each participant in order to ensure for accuracy. In addition, Brooke Warrick also reviewed the case facts and analysis and I met with him in-person to obtain his feedback. The case study is presented in two parts, the case facts followed by the case analysis, in order to allow the reader to analyze the case facts more objectively.

Case Facts – Lifestyle Market Research for Home Builders

“Home buyers see through different eyes than do builders and architects. They want to know how livable a house is, in terms of their own lifestyle” (LIVES, Inc. 1997).

With over two decades of experience working in marketing departments for home builders, Brooke Warrick understands the entire process of developing single-family homes. Warrick’s expertise, consumer market research, originated from his educational background in marketing and psychology. He is unique among the group of consultants researching home buyers because of the research skills he acquired in his position as the Director of Marketing for the VALS Program at Stanford Research Institute (SRI). VALS, a commercially available psychographic database, surveys consumers’ values, attitudes, and lifestyles (hence, the acronym). Psychographics, in greater detail than demographics, constructs descriptive consumer profiles and strives to explain the “why” of consumer behavior. Product design companies, with a national market, are the predominant users of VALS.

In the mid-1980s, Warrick became discontent with the VALS Program for two reasons. First, VALS’s consumer profiles ignored geographic influences and were therefore only minimally applicable to industries that operate in local consumer markets, like housing. Second, every consumer that VALS surveyed was categorized into predefined groups. Warrick believed that VALS should have, instead, derived new consumer groups for each project sample. Realizing the potential to borrow from the conceptual design of VALS’s survey and analysis, yet modify it to the particulars of housing, Warrick left his position at VALS.

In 1987, he founded his own company named American LIVES, Inc. (Lifestyles, Interests, Values, Expectations, and Symbols). Although LIVES provides services for any complex or symbolically laden product, the firm specializes in lifestyle market research for home builders. Warrick founded the company with his partner, Dr. Paul Ray, a sociologist and former Professor of Urban Planning at the University of Michigan. LIVES offers numerous qualitative and quantitative research services, custom-tailored to their client’s needs. They have surveyed over 200,000 Americans and currently practice as the only consumer market research firm that quantitatively segments home buyer markets by lifestyle.

Problem – Builder’s Diminishing Home Sales

Brooke Warrick had recently returned to his hometown, San Francisco, from Scottsdale, Arizona. While in Scottsdale, he had consulted one of his clients, Maracay Homes, about their new model home interior designs. Almost a year and a half had passed since Warrick began consulting Maracay Homes in the fall of 1997. During his recent visit, Maracay’s President had given him their current “History and Development” synopsis. In it, Warrick read:

“In 1997 through mid 1998, Maracay experienced a loss of market share and profitability. This was in part due to increased market competition, outdated product, and poor sales and marketing.”

Professional Builder, who annually ranks the first 400 single-family home builders by total revenues, listed Maracay Homes consecutively:

Table 1. Maracay Homes

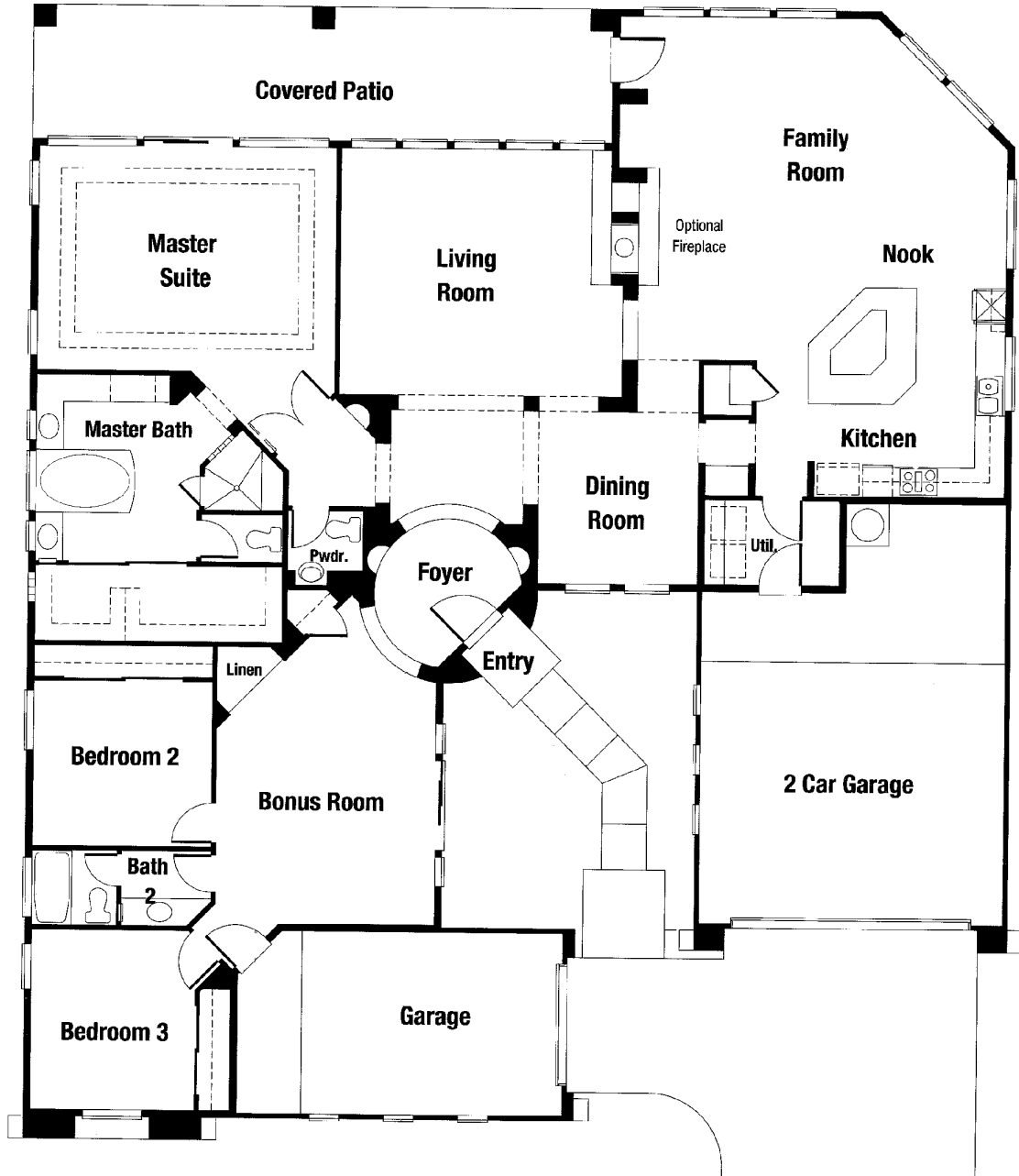
Year	Rank	Revenues	Starts	Closings
1995	155	\$64,100,000	273	367
1996	213	\$56,000,000	230	245
1997	281	\$43,755,000	185	140

Source: Professional Builder. 1996. *The Giant 400* (April): 116; Professional Builder. 1997. *The Giant 400* (April): 138; Professional Builder. 1998. *The Giant 400* (April): 120.

In 1997, Maracay Homes was clearly struggling to sell their homes. In addition, Maracay’s geographic market, Phoenix/Mesa, had been listed in US Housing Markets as the second fastest growing market, trailing only Atlanta. This attracted the national home building corporations to the area and encouraged start-ups of smaller home building companies. Among the home building companies in Phoenix/Mesa were well-known builders such as Shea, UDC, Pulte, Richmond America, Hancock, US Homes, and Centex.

Maracay’s President, David Bessey, had practiced as a builder for almost 30 years and he acknowledged, along with his two Canadian partners, the impending need for Maracay to reposition in the market. They agreed that Maracay should continue to compete exclusively in the Phoenix/Mesa geographic market, even facing fierce competition, because local market analysts had predicted continued housing growth in the area. Maracay’s partners also agreed to maintain the company’s medium-size in order to avoid competing with the larger-sized, mass production builders.

During this period, Maracay's identity statement was "Elegance by Design", conveying to home buyers the company's tendency to compete through their product design prior to customer service or price. Maracay targeted move-up buyers, split evenly between second time move-up buyers and third time move-up buyers. The Del Mar (Plan 901), Figure 1, illustrates an example of Maracay's product design during this period.



Del Mar Plan 901
 2957 Livable Sq. Ft. - 3 Bedrooms
 plus Bonus Room, 2 1/2 Bath, 3 Car Garage

Figure 1. Example of Design before Consumer Research

The Del Mar prototype belongs to the Sunset Vistas development located in Scottsdale, northeast of Phoenix. A *Professional Builder* article featuring the Del Mar opens, “In his efforts to claim a niche in the booming move-up market of Scottsdale, Ariz., Dave Bessey of Maracay Homes took a gamble” and strayed from the traditional Southwestern architectural style characteristic of houses in the area (Professional Builder 1998b). After concluding with his architect that numerous Maracay buyers were California expatriates, Bessey ventured to appeal to them with a Pacific Coast architectural style. The architect based the Del Mar prototype on 1920s and 30s California architects’ designs, such as those of Wallace Neff. Neff designed mission-style courtyard houses for the Hollywood elite. One approaches the Del Mar through a landscaped courtyard and then proceeds into a two-story, rotunda entry. Even though the Del Mar model home was one of Maracay’s most frequently visited, Bessey expressed regret.

“The model probably included too many luxury bells and whistles. We now realize that this is very much a family-styled home, where kids can do homework at the kitchen bar. We probably used too many upgrades in the model – especially in the kitchen. If I did it again, I’d have a little more laid-back feel” (Professional Builder 1998b).

Bessey’s comments hint at his sense of an incongruence between the Del Mar design and Maracay’s potential home buyers.

Maracay began repositioning with a concentrated search for a marketing consultant. After interviewing multiple candidates, a Canadian home builder referred Rick Heaston, who was currently completing a project for them, to Bessey. Heaston predominately trains home builders’ sales staff but he also assists home builders in revising their marketing strategies. Maracay employed Heaston as their adjunct marketing director, a position entailing the development of Maracay’s design and marketing strategies. Heaston immediately advised Maracay to begin a search for a new sales and marketing manager as well as to replace a portion of their sales staff in the near future. Heaston evaluated Maracay’s allocation of sales and marketing funds and suggested that Maracay dedicate part of the resources to investigating the preferences of Maracay’s potential home buyers. Heaston was convinced that in order for Maracay to successfully reposition their products would necessitate obtaining a clearer picture of their potential home buyers. Bessey, with only secondhand familiarity with consumer market research, yet experiencing increasing financial pressures, agreed. Bessey wrote in Maracay’s “History and Development”:

“[S]eeing the potential for continued housing growth, a substantial financial commitment was made to conduct market research to assist in product design and marketing.”

While previously training sales staff at Wayne Homes in Ohio, Heaston had met Brooke Warrick, who was simultaneously working for Wayne Homes. Heaston had not collaborated with Warrick, but he had observed his profitable results at Wayne Homes and Rayco Homes in Texas. Rayco had the reputation as one of the most profitable builders in the country. In 1996, when Kaufman and Broad purchased Rayco, they reported over 40% market share of the new houses in San Antonio with gross revenues of \$236.2 million and net pretax income of \$28.3 million (Donohue 1997). Heaston credited a large portion of Rayco's success to their extensive knowledge of their potential home buyers, a result of research that Warrick initiated. Heaston regarded Warrick as an industry guru, who perhaps had the best understanding of home buyers' motivations.

In the fall of 1997, Maracay Homes employed Warrick to conduct a home buyer survey. During the initial meetings with Warrick, Bessey disclosed Maracay's market share statistics, described their competitors, toured Maracay's model homes and their competitors' model homes with Warrick, and selected the geographic areas to include in the survey sample.

Consumer Market Research – Market Opportunity Analysis

Maracay Homes requested that LIVES conduct their most sophisticated quantitative research method, called the Market Opportunity Analysis (MOA). In general, a MOA profiles home buyers' house design preferences and values, sizes and locates the profile segments, and evaluates the competitions' home buyers. LIVES modified the MOA survey for five years before its content, form, and analysis were established.

In November 1997, LIVES distributed the seven-page MOA survey through the mail to 4837 recent home buyers in Greater Phoenix.¹ The sample areas included Scottsdale, Cave Creek, Mesa/Gilbert, Chandler/Tempe, Glendale/Peoria, and Phoenix. The sample included both new and resale house buyers, of which a portion were Maracay buyers. LIVES considered recent buyers appropriate respondents because they had just considered the tradeoffs in the home buying process and were therefore likely to respond more realistically than home shoppers. A cover letter accompanied the survey. It explained that the recipients' responses could guide the design of new homes and included a one dollar bill as a token of appreciation. The recipients completed and returned 904 surveys, totaling a 19% response rate. Although LIVES had anticipated a higher response rate, the sample was large enough to generate statistically

¹ The survey is not included in the case study as American LIVES, Inc. requested.

significant results. Warrick reasoned that the lower response rate was due to the imminent holidays.

The survey's four sections concerned differences between resale buyers and new buyers, preferences for characteristics of a house and its rooms, values, and demographics. The survey's second section, concerning the participants' preferences for houses and rooms, had the greatest implications for Maracay's prototype house designs. The survey listed identification statements that respondents rated on a Likert scale (not important, somewhat important, very important, and extremely important). In order to collect realistic preferences, the identification statements begin with what the respondent thinks her house "*should have*" versus what she "does have" or "could have". As the respondents returned the surveys, a survey vendor logged in the responses and then sent the database to LIVES. Paul Ray developed the statistical analysis method, combining multiple regression, factor analysis, and cluster analysis.

LIVES uses factor analysis to determine groups of statements, or dimensions, that respondents answer similarly. If one respondent answers differently from another respondent in one statement, it is likely that their answers to the other statements in a particular dimension will also differ in a predictable way. Dimensions are more stable than individual statements and allow for subsequent analysis using fewer, yet equally meaningful, variables. For example, one of the dimensions resulting from the survey, named "heavy use of living room", includes agreement with the statements: "a room for my family to gather", "a good place to entertain my friends", "a room for conversation and visiting", "a room we expect to use nearly every day", "a place where I feel comfortable", "a big room even if it is a smaller house", "a place that we have made very personal", "and a place for intimate conversations with friends". Grouping correlated statements can allow for one to discover new concepts that might not be apparent when evaluating individual statement responses. Table 2 lists the dimensions that resulted from LIVES's analysis of the Maracay sample.

Table 2. Dimensions Derived from Factor Analysis

Flexible and Growing Space

House should have:

- An unfinished area that can be expanded when I want it
- Some rooms that can have several uses, like bedroom, den, guest room
- Flexible space; loft space or extra bedroom
- Flexible space that can be changed later, i.e., bedroom to great room
- Garage space that could be converted to family room space
- Storage space that could be converted to living space or the other way around

Choices of Style and Options

House should have:

- The ability to customize the design to my taste
- Design and décor that is unique and different
- Lots of choices of colors for the outside of the house
- Lots of choices of options
- Lots of choices for floor coverings
- Choices for color of roof

Space for Kids

House should have:

- A game room or entertainment room
- Separate children's game room
- Good sound buffering between adult and children's area

Separate Distinct Room Uses

House should have:

- A dining room separate from the living room
- Another bedroom, rather than upgrades or options
- Each room has a clear, specific function, like dining

Nest and Safe Haven

House should have:

- A sense of being a safe haven away from the world
- A feeling of being a nest

Big Kitchen

Kitchen should have:

- A place with conveniences that save me time
- Set up to prepare large dinners for family and friends
- Where I've easy access to specialty pans, pots, utensils, etc.
- A room with lots of counter and cabinet space
- Built with a large pantry (storage area)

Heavy Use of Living Room

Living Room should have:

- A room for my family to gather
- A good place to entertain my friends
- A room for conversation and visiting
- A room we expect to use nearly every day
- A place where I feel comfortable
- A big room even if it is a smaller house
- A place that we have made very personal
- A place for intimate conversations with friends

Master Bedroom Retreat

Master Bedroom should be:

- Quite large, even if it takes space from other living areas
- A place where I can express my personal tastes
- A quiet place to be alone
- Open to the out-of-doors

Master Bathroom Retreat

Master Bathroom should be:

- A good place to spend lots of time
- A good place to relax and get away from the world

Luxurious Living Room

Living Room should be:

- A formal room for special occasions
- A room to display my valued possessions
- Luxurious looking
- A room that only adults use, not children or grandchildren

cont. Table 2.

Comfort

House should have:

- A sense that I may never have to move again
- A below average price I can comfortably afford
- A feeling of comfort like an old shoe
- The kind of comfort that I grew up with as a child

Impressive Look and Style

House should have:

- Elegant design or decorating, even if it is small
- A front foyer that impresses people when they come in
- An impressive front door
- Master bath should be: luxurious looking
- Master bedroom should be: luxurious looking

Front Facade

House should have:

- Foliage in front that conceals the house from the street
- A large usable front porch

Garage Options

House should have:

- Side entry to the garage
- A three car garage

Room for Office

House should have:

- Two stories
- Good space for an office in the home

Heavy Use of the Family Room

Family Room should be:

- Large
- A nice room for entertaining my friends
- Open to the out-of-doors
- A place for children to play
- A TV room
- A place for intimate conversations with friends
- Open to the kitchen

Simple Master Bedroom and Kitchen

- (Kitchen) Simple and practical
- (MBR) Simple and comfortable

Kitchen for Entertaining

Kitchen should be:

- A place for my company to gather in
- The latest in kitchen design
- Especially large, like a country kitchen
- A place for intimate conversations with friends
- A part of the house I can be proud to show my friends

Merged Family Room and Living Room

- (LR) Actually, we don't need a formal separate living room
- (FR) Actually, we don't need a family room

Source: LIVES, Inc. 1997.

After LIVES determines the dimensions, Paul Ray uses cluster analysis to group subjects whose responses are similar along the dimensions. Cluster analysis typically requires a statistician to discern if the cluster's centroids (statements that subjects respond to similarly) and boundaries (statements that subjects respond to differently) are sufficiently defined.² After the clusters have been determined, LIVES names them and composes a brief synopsis, or profile, of each cluster.

In December 1997, Warrick presented the MOA analysis and results to Maracay Homes. The report included cluster profiles of house design preferences (Home Styles), cluster profiles of home buyers' values, a competitive analysis, a location analysis, attitudes of resale buyers versus new buyers, and demographics. Although LIVES defined three value clusters (Moderns, Cultural Creatives, and Heartlanders) that assisted Maracay Homes in their marketing and model home interior design strategies, the following discussion focuses on the Home Style clusters because they had the greatest influence on product design. LIVES defined five Home Style clusters from the sample, named: Plain Vanilla Home (PVH), Functional House (FH), Spacious Family House (SFH), Luxury Entertainment Retreat (LER), and Grand Winner House (GWH). Although LIVES's nomenclature stereotypes the clusters, the names do not completely reveal the clusters' characteristics. Figure 2 indicates the strength of the clusters' dimensions as well as the size of the clusters as a percentage of the total sample. Figure 2 was included in LIVES's Market Opportunity Analysis report.

² LIVES, Inc. uses k-means cluster analysis.

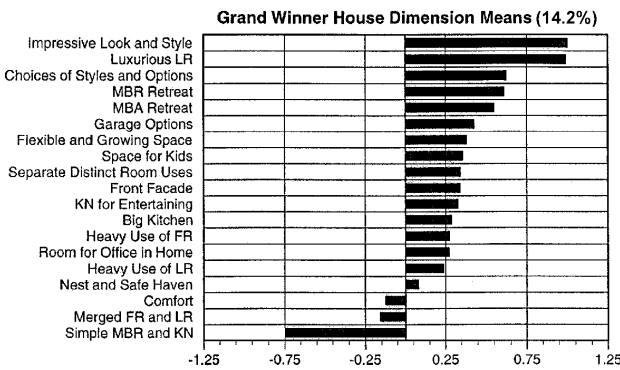
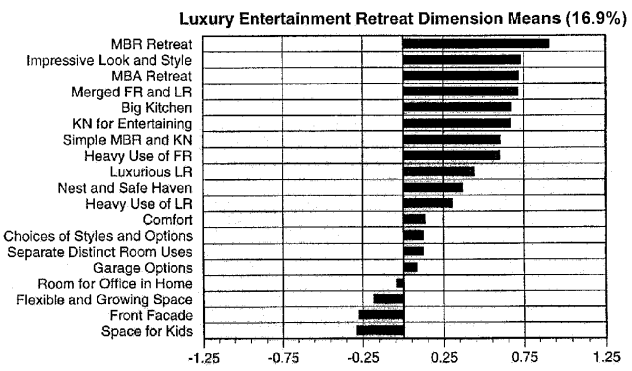
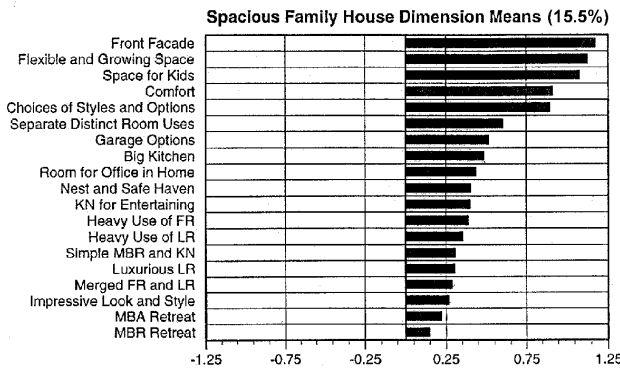
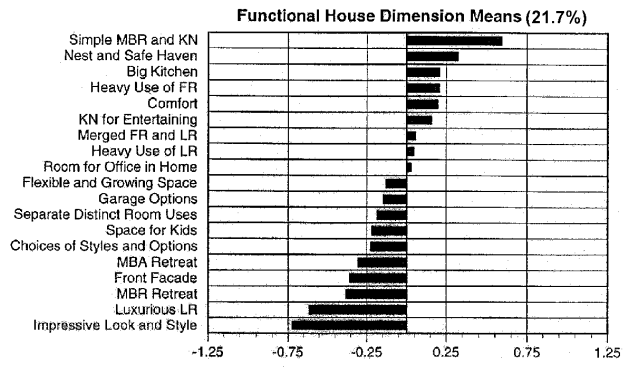
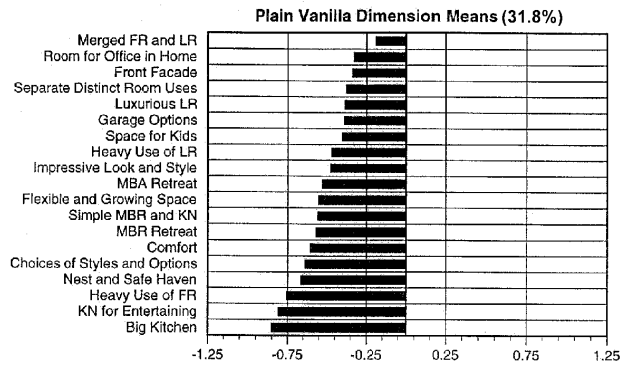


Figure 2. Home Style Clusters

The more negative the dimension mean, the more that cluster's members regard the dimension as "not important" whereas the more positive the dimension mean, the more that cluster's members regard the dimension as "extremely important". Although the clusters appear to be ranked in an obvious hierarchy from the PVH to the GWH, the ordering does not coincide with price or number of square feet. For example, the average prices of the PVH and the LER are the same, and the average square footage of the SFH is larger than the LER.

The LIVES report reviewed a number of significant findings. The data reflected that the majority of Maracay's current buyers preferred the Grand Winner House Style. Two dimensions, "impressive look and style" and "luxurious living room" entice the GWH home buyers (refer to Table 2 and Figure 2). Interestingly, of all the MO surveys LIVES had conducted, this was the first instance that the Spacious Family House cluster emerged. In addition, 72% of the resale buyer respondents (14% of the total sample) actually preferred the qualities of a newly constructed home. This finding suggested the potential to attract resale buyers into the new home market. The sample was affluent with more than double the national median family income at \$85,000, and an average house price of \$180,000.

In his practice, Warrick strives to mirror the home buyer market as accurately as possible and although he continues to advise his clients after completing a report, he encourages them to determine how to apply the results. After presenting the report, Warrick mentioned to Bessey that he was skeptical that Maracay would employ LIVES's findings, since he knew that translating the results into design would require focus and patience. Heaston accepted the responsibility of implementing the research results.

Design Program – Spacious Family House

Through multiple telephone conversations, Rick Heaston meticulously reviewed the findings with LIVES to ensure that he was interpreting the results accurately. The report presented Maracay with several strategic opportunities, but Heaston was convinced that for the research results to come to fruition, he would need to concentrate on only a few objectives. He opted to first select a Home Style cluster for Maracay to target since subsequent decisions would follow. Heaston determined with Bessey that Maracay Homes should target the Spacious Family House (SFH) home buyers. LIVES profiled the SFH style:

"Flexible and child-oriented space is the key definer of this style. These buyers want a nest-like home with a large front porch for neighborly socializing. Comfort is key and

there is also a fairly high degree of personalization and desire for choices and options here. Rooms mostly have distinct functions. This is one of the bigger homes and more space is key. Twenty-eight percent have homes bigger than 2,750 square feet. The average home price is \$181,000” (LIVES, Inc. 1997).

Heaston and Bessey elected to target the SFH home buyers for several reasons. After reviewing the components of each Home Style cluster, Heaston realized that he could recall examples of local competitors’ model homes that represented all of the Home Style clusters except the SFH. Heaston noted that LIVES had recorded home buyer demand but that they had not documented the characteristics of the existing housing supply. Warrick supported Maracay’s decision and agreed that targeting the SFH home buyers tended towards a market creative strategy rather than a market competitive one. In addition, of the five Home Style clusters, the SFH home buyers demonstrated the most dramatic desire for particular dimensions (refer to Figure 2).

Next, Heaston decided that Maracay should conceive a new identity statement based on the SFH cluster’s characteristics. Although Heaston found the SFH’s most positive dimension means (“front facade”, “flexible and growing space”, “space for kids”, “comfort”, and “choices of styles and options”) helpful in determining an identity statement, he questioned if the individual statement means might also provide guidance. After multiple discussions with Warrick, Heaston constructed Table 3. The table lists, in decreasing order, the means for the SFH survey statements.

Table 3. Statement Means for Spacious Family House

Statement	SFH	LER	GWH
the ability to customize to my taste	90	68	80
a sense of being a safe haven away from the world	89	90	86
lots of choices for floor coverings	88	76	86
lots of choices of options	88	68	88
good sound buffering between adults’ and children’s areas	87	45	66
a three car garage	82	63	77
some rooms that can have several uses	81	50	68
design and décor that is unique and different	80	60	77
flexible space; loft space or extra bedroom	78	46	68
a sense that I may never have to move again	78	55	51
flexible space that can be changed later	75	27	52
the kind of comfort that I grew up with as a child	75	61	49

Source: Rick Heaston.

Heaston also listed the means for the LER and the GWH clusters in order to calculate those statements that were uniquely SFH by noting the differences between the SFH mean and the LER and GWH means. These statements include, in decreasing order: “flexible space that can be changed later”, “good sound buffering between adult and children’s areas”, “a sense that I may never have to move again”, “some rooms that can have several uses”, “flexible space; loft space or extra bedroom”, and “the kind of comfort that I grew up with as a child”. Heaston deduced that if Maracay concentrated on translating these SFH identification statements into prototype designs, that the likelihood of appealing to SFH buyers instead of LER or GWH buyers would increase. Based on this analysis, the observation that “flexible and growing space” was the second most positive dimension mean in the SFH cluster, and further discussions with Warrick and Bessey, the phrase “Flex Design” became Maracay’s identity statement. Although Heaston recognized that Maracay’s competitors could replicate the concept, no local home builder had claimed it as their company’s identity. Maracay anticipated that Flex Design would attract those buyers leaning toward purchasing a resale house, since up-front customization was one advantage of buying a new house versus a resale house.

The third decision was to select sites in Greater Phoenix to target for land purchases. The LIVES report emphasized that home buyers tended to abide by the proverb, “birds of feather flock together”. The location analysis indicated that Maracay was building products for target markets in locations that were not ideal. For example, the Del Mar (Figure 1) most closely satisfies the GWH profile and was built in Scottsdale where buyer demand was higher for the LER or the PVH. The report indicated that the area to target the SFH home buyers was in Chandler/Tempe followed by Mesa/Gilbert.

Design – Flex Design

Although Maracay discovered that applying the research results proved challenging, Heaston asserts that the results established a baseline for strategic decision making and provided the team a common language and approach to the local home buyer market. The LIVES report influenced several Maracay developments, but the remainder of the discussion concerns one prototype called Four Peaks (Plan 450), located at Harris Park in Mesa.

The Southwestern regional office of Bloodgood Sharp Buster Architects and Planners, Inc., located in Scottsdale, was hired to design the prototypes at Harris Park. Although Jack Bloodgood founded the corporation over 30 years ago, BSB’s Scottsdale office was only two and a half years old. BSB maintains six regional offices in cities with high housing production growth,

all of which dominantly consult operative home builders. Bloodgood began his career as the architecture editor of *Better Homes and Gardens* and has ever since approached housing design from the consumer's perspective. As *Builder* magazine wrote in their annual historical review, "more than any architect before him, [Bloodgood] bridged the gap between architects and home builders" (Donohue 1999). BSB's Southwestern Regional Vice President, Howard Pals, led the design team of three architects for Maracay Homes.

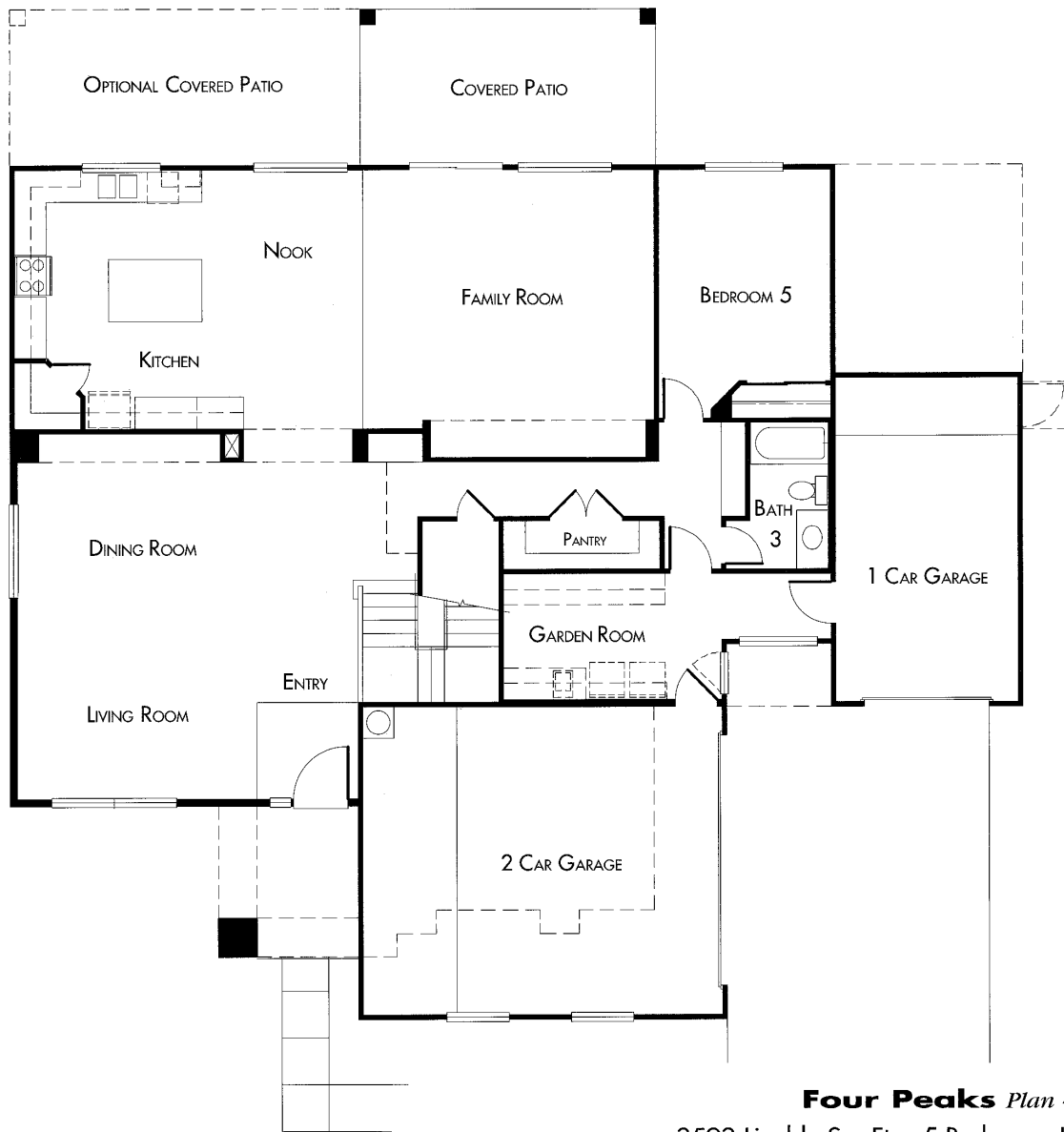
Although components of LIVES's report were discussed company-wide, Maracay distributed the full report to only a few, select employees, as Bessey was wary of one of Maracay's competitors obtaining the research results. Since BSB consulted several home builders in the area, they did not receive the report but Heaston prepared design guidelines for them instead. Heaston's SFH design guideline included the number of livable square feet (over 2,750), number of bedrooms (four), family area configuration (combined family room and kitchen), living area configuration (combined living room and dining room), and garage size and configuration (three car garage, split). Heaston also provided the architects a copy of Table 3. He highlighted and explained both the significant dimensions of the SFH cluster and the most significant identification statements.

BSB was the first architecture firm to introduce in-house charrettes to the home building industry.³ The key component of BSB's charrettes was client feedback during design. For the SFH prototypes, the design team stationed themselves in Maracay's corporate office, persistently designed for three and a half days and obtained feedback from Bessey, Heaston, Warrick, the model home interior designer, the sales manager, purchasing and construction personnel, major subcontractors, and Bessey's two partners. Since the architects were the only team members sketching, they had to distill and prioritize the design requirements from the design guide and verbal discussion and translate them into working plans. Pals noted that although Heaston's design guidelines defined the design issues more precisely than usual, the design team experienced difficulty isolating the parameters relevant to design. Although the majority of home builders offer their home buyers product options (manufacturer, style, and color), this was the first instance that Pals had encountered a home builder offering spatial options that altered the location of interior walls, plumbing, and fenestrations.

Several conditions limited the Flex Designs. First, the site setbacks confined the exterior envelope – rarely was it altered. Second, Maracay maintained the load bearing walls for all the Flex Designs. By upholding these conditions, Maracay could initiate the house construction before the home buyer selected their Flex Design.

³ A charrette, a term commonly used in architecture practice, is an intense, fast-paced period of working, typically to meet a deadline.

Representing the largest of the six Harris Park prototypes, Four Peaks can expand from a three to a seven bedroom house and from a three to a five bathroom house (Figure 3, 4, and 5).



Four Peaks Plan 450
 3593 Livable Sq. Ft. - 5 Bedroom, Loft,
 3 Bath, Split 3 Car Garage

Figure 3. Example of Design after Consumer Research – First Floor

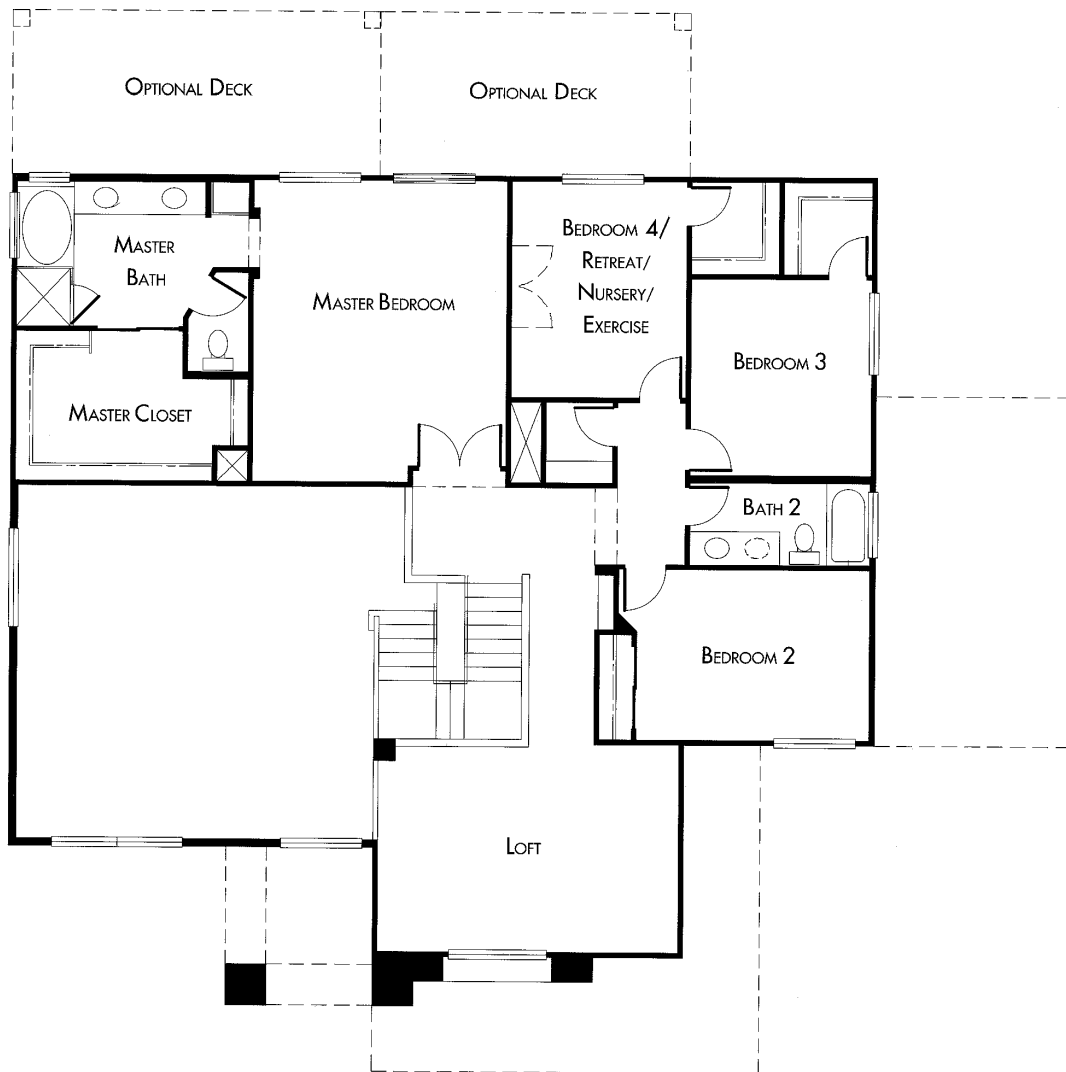
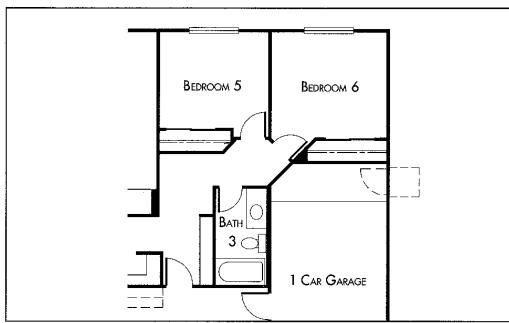
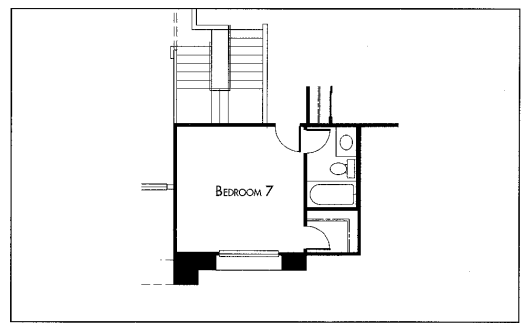


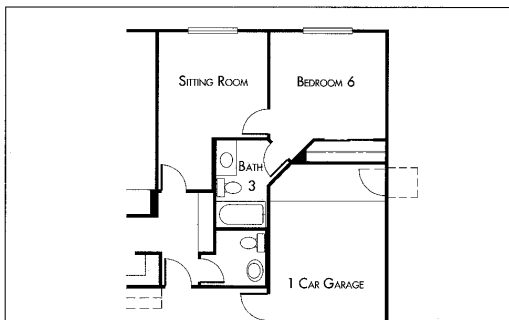
Figure 4. Example of Design after Consumer Research – Second Floor



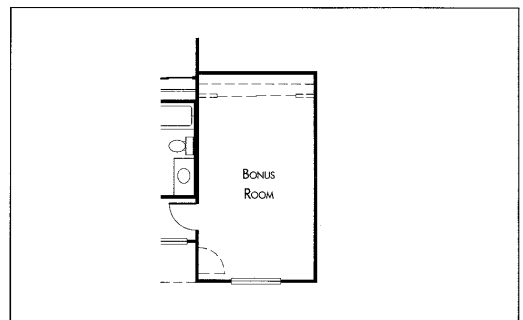
1 Bedroom 6 (adds 164 s.f.)



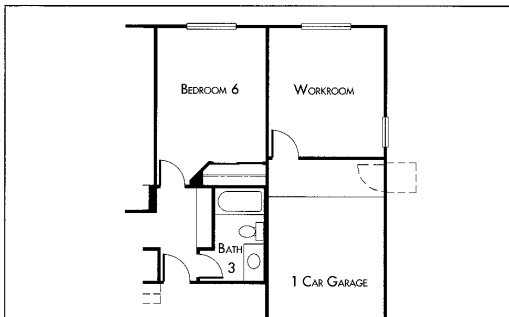
2 Bedroom 7 I.L.O. Loft



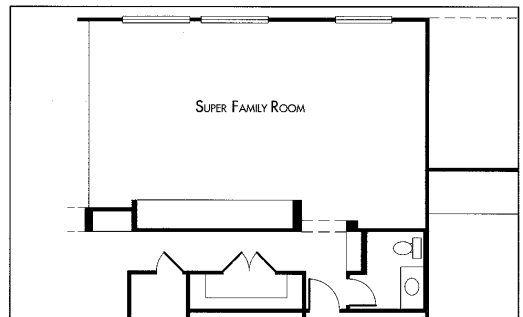
3 Sitting/Bedroom 6 (adds 164 s.f.)



4 Bonus Room I.L.O. Garage (adds 257 s.f.)



5 Workshop (adds 164 s.f.)



6 Super Family Room I.L.O. Bedroom 5

Figure 5. Example of Design after Consumer Research – Options

The physical uses of Plan 450 are numerous. The loft can be left unfinished, yet the design allows for ease of enclosure in the future. Several of the rooms' locations (loft, bedroom 5, 1 car garage) lend themselves to multiple uses depending on the occupants' immediate needs. Bedroom 5 or Flex Design 1 could allow for teenagers bedroom(s) to be on a separate level from the adults' and small children's bedrooms. Flex Design 2 allows for a guest or nanny's room including a private bath or Flex Design 3 – a guest suite. Bedroom 5 or Flex Design 2 might be used as a home office, library, or hobby room. Maracay buyers selected from three elevation styles that varied in color, exterior material, window style, and landscaping. Home buyers also selected from multiple product style and color choices (countertops, carpeting, sinks) and features (pool, entertainment center with surround sound). As the Harris Park sales brochure summarizes:

“Maracay's Flex Design gives you the freedom to add rooms or change them around to make our floor plans fit your lifestyle. You can turn the third garage into a guest room, a home office, or a game room. Turn you den into a media room, or you can even turn your bonus space into a retreat where your kids can entertain without disturbing the rest of the family. We also give you more choices and more options when it comes to appliances, time-saving conveniences, fixtures, finishes, colors, and floor coverings.”

Because the Harris Park home buyers had to consider their current and future living scenarios in order to select from the Flex Design options, the assistance of the sales staff became crucial. Heaston had developed his own sales method, called Touch Point, that included a technique called Interview Selling. The method Heaston teaches counters the commonly practiced critical path method, where sales staff present a house while continually directing the conversation to closing the sale. Instead, Heaston trains the sales staff to focus on assessing the home buyers' current living patterns and problems through layers of questions. Only after the salesperson determines the home buyers' lifestyle needs do they discuss feasible design solutions. Heaston's method was suited to Maracay's Flex Design because the sales staff had numerous spatial configurations to offer potential home buyers in order to satisfy their living needs.

Results – Builder's Increase in Home Sales

“By mid 1998 Maracay began to see marked improvement in its sales velocity. By comparison, Maracay coming into 1998 had a backlog of 98 unclosed homes which included both unstarted and homes under construction. Coming into 1999 Maracay had

a backlog of approximately 240 units representing an increase of approximately 145%” (Maracay Homes, “History and Development” report).⁴

Since the implementation of the consumer research results, Maracay Homes had dramatically increased their home sales. As a comparison to Table 1, Maracay projected its revenues for 1999 at \$67 million and planned to close approximately 330 units (and sell 450 units) in contrast to the 150 units they closed in 1998.

In March 1999, more than a year after the completion of LIVES’s report, Bessey expressed concern to Heaston that he no longer felt the creative momentum that the LIVES report had instigated. In addition, one of the large-sized production builders in the area was offering their home buyers spatial design options. Even though they targeted a more generic home buyer market, Bessey was distressed. Heaston pointed out that Maracay had yet to profile their home buyers or measure customer satisfaction, but continued to evaluate their success based on home sales. At the time, Heaston contemplated designing kitchen and master bedroom and bath modules targeted at each LIVES value type (Heartlander, Modern, and Cultural Creative) that could be inserted into SFH prototypes at no additional cost. Heaston also considered returning to LIVES’s report for additional guidance, since its life span was approximately three to four years. Whatever the case, Maracay had learned that consumer market research had permitted them to successfully reposition their product in the market.

⁴ The number of backlogs predicts a homebuilder’s sales and earnings prospects for several quarters to come because of the time that elapses after an order has been received, before the closing.

Case Analysis – Limitations of the Case Study

The case facts presented only two of Maracay's house prototypes in order to illustrate the affect of lifestyle consumer market research in-depth. The author selected the two examples, the Del Mar (Figure 1) and Four Peaks (Figures 3, 4, and 5), because they belong to the small number of widely publicized Maracay products. The Del Mar currently stands as the only Maracay home published in one of the leading home building industry publications and Four Peaks is one of only two plans depicted on Maracay's web site. The case did not include illustrations of the house lots and neighborhood planning because they are absent from Maracay's sales brochures. Furthermore, the case excludes tracing the influence of LIVES' home buyer value types (Moderns, Cultural Creatives, and Heartlanders). Although these value types dramatically impacted Maracay's customer relations, advertising strategy, and model home merchandising, they generally only influenced the spatial designs at a micro-scale (selection of appliances, fixtures, and case work).

Topical Categories of Identification Statements

Although LIVES designed the MOA survey to assist in guiding the entire home development process (including land purchasing, design, model home merchandising, marketing/advertising, and customer sales) Maracay used the results of the survey section concerning preferences for the characteristics of a house and its rooms to guide the design of their prototype houses. The following ascertains the characteristics of the MOA identification statements that Maracay translated into the house design.

The survey identification statements can be categorized into three topical groups – those that concern the home buyer, the building, and the congruence between the home buyer and the building.

The first topical category of identification statements concerns the home buyer and interpreting these statements into design depends highly on the designer's subjectivity. A portion of these statements pertains to the occupant's emotional responses to a house or rooms, similar to the study of environmental psychology. These identification statements frequently include the phrases, "a sense" or "a feeling" and the words, "comfort" or "impress[ive]". Translating the statements, "a sense of being a safe haven away from the world", or "a feeling of being a nest", or "the kind of comfort that I grew up with as a child" into design poses an ambiguous design problem. These emotive statements more readily assist in selecting advertising images and copy

or model home merchandise. For example, Maracay Homes addressed the fourth most positive dimension mean in the SFH cluster, “comfort”, through images on their web page. The web pages include a robust man barbecuing, a man reading in a chair, and pets, that all convey sentiments of comfort. The next portion of the statements in the home buyer category pertain to aesthetic taste. Similar to the statements concerning emotional responses, the design interpretation of terms such as “unique”, “elegant”, and “simple” greatly depend on an individual’s perspective. Notably, LIVES did not correlate the only three statements that refer to a house’s front elevation style: “a traditional look to the front of the house”, “a modern look to the front of the house”, and “a classic style, such as Southwest or Santa Barbara”, with other statements in the factor analysis. Therefore, none of the Home Style clusters include a front elevation style.

The second topical category of statements concern preferences for the building and satisfying these statements typically only requires a direct incorporation into design. These statements describe the physical structure of a house, in particular, the separation of rooms or a room’s type, size, or location. This category of statements tends toward a more objective and prescriptive interpretation into design than the previously discussed category. For example, incorporating “a game room or entertainment room” in a house design simply necessitates, at minimum, labeling a suitable room “game room”. The primary problem with this group of statements in informing design is that the reason why a home buyer prefers a specific physical design remains unknown and therefore is subject to misinterpretation. For instance, LIVES identified the most positive dimension mean for the SFH cluster as “front facade”. This dimension included the identification statements, “a large usable front porch” and “foliage in front that conceals the house from the street”. Maracay elected not to include a front porch or landscaping that hid Four Peaks’ front elevation perhaps due to economic constraints or to a lack of understanding their purpose. LIVES’s SFH profile identifies a purpose – “these buyers want . . . a large front porch for neighborly socializing” (LIVES, Inc. 1997). Yet, the identification statement never referred to a particular use for the porch. Perhaps LIVES surmised that SFH home buyers prefer a front porch for neighborly socializing based on prior qualitative research. However, the second statement, “foliage in front that conceals the house from the street”, even appears to contradict a desire for neighborly socializing.

The third topical category of identification statements concerns the congruence between the home buyer and the building. This group of statements splits between those statements that pertain to preferences for the house and those that pertain to preferences for rooms. The statements that pertain to preferences for the house include the importance of choice of style and color of house products and the degree of room finishes (such as unoccupied space versus occupied space). The statements that pertain to preferences for the rooms specify private versus

public room uses, frequency of room use, and use of rooms for adults or children. In addition, the category also includes preferences for the use of products present in the purchased house, such as appliances, plumbing fixtures, closets, and casework. This third category of identification statements uniquely agrees with the primary goal for the design of prototype houses – achieving congruence between the home buyer and the house.

The following discussion traces the translation of the SFH identification statements into the design of Four Peaks to demonstrate that the identification statements in the “congruence” category informed the design.

Identification Statements that the Team Translated into the Design

The most positive dimension means (above +.75) for the SFH cluster include: “front facade”, “flexible and growing space”, “space for kids”, “comfort”, and “choices of styles and options” (Figure 2). Each of these dimensions can be categorized into one of the topical groups: home buyer (“comfort”), building (“front facade” and “space for kids”), congruence (“flexible and growing space” and “choices of styles and options”). Of the five dimensions, the two dimensions that the team translated into the Four Peaks design concerned the congruence between the home buyer and the house, even though they were not the most positive dimension means. The design of Four Peaks, along with the Flex Design options, satisfies virtually all of the statements belonging to the “flexible and growing space” and the “choices of styles and options” dimensions. For example, Flex Design 2 addresses “flexible space; loft space or extra bedroom”, Flex Design 6 addresses “flexible space that can be changed later, i.e. bedroom to great room or family room”, and Flex Design 4 addresses “garage space that could be converted to family room space”. The two dimensions form the *parti*⁵ for Maracay’s prototype designs, to the point that Maracay offers flexible spaces and choices of products beyond satisfying the research results.

Two of the five SFH dimensions omitted from the congruence category, “front facade” and “comfort”, can not be visibly traced in the architectural design of Four Peaks. The remaining high scoring SFH dimension mean, “space for kids”, belongs to the building topical category. This dimension includes the statements, “a game room or entertainment room”, “separate children’s game room”, and “good sound buffering between adult and children’s area”. Although Maracay mentions a game room and an isolated children’s entertainment room in the Harris Park sales brochure (refer to section titled “Design – Flex Design”), the team elected not to designate a room as a game room in the Four Peaks plan. A logical explanation for this may have been that the

⁵ A term used in architecture practice, a “*parti*” is the overriding design concept that guides design decisions.

location of a game room depends largely on the children's ages and whether the home buyer prefers to have their children in view. Notably, the sound buffering statement exists as the only statement that refers to the house's environmental systems (light, temperature, or air circulation). Conceivably, Maracay did not translate this statement into the design of Four Peaks because the home buyers would need to experience the degree of the sound control in order to assess their preference.

Although LIVES's factor analysis was effective because it revealed novel design concepts (like the dimension "big kitchen"), Heaston decided to analyze the individual statement means as well. This decision was significant considering that LIVES had disregarded a group of uncorrelated statements after the factor analysis (a total of ten identification statements). In addition, an extreme individual statement mean could skew the dimension mean, causing the remaining individual statements to appear deceptively significant. Also, without reviewing the raw data and the statistical analysis, a few of the dimensions seemed dubious. For example, the dimension, "room for office" included the statements, "the house should have two stories" and "good space for an office in the home", even though the statements do not appear logically related.

After analyzing Table 3, Rick Heaston decided to focus on the following statements: "flexible space that can be changed later", "good sound buffering between adult and children's area", "a sense that I may never have to move again", "some rooms that can have several uses", "flexible space – loft space or extra bedroom", and "the kind of comfort that I grew up with as a child". Similar to the previous discussion, Maracay did not translate those statements that were not part of the congruence category ("good sound buffering between adult and children's area", "a sense that I may never have to move again", and "the kind of comfort that I grew up with as a child") into the Four Peaks design. As previously noted, Four Peaks clearly satisfies all three of the remaining statements that Heaston focused on that belong to the congruence category.

Although the discussion traces only one prototype design, in both the interpretation of the SFH cluster dimensions and the individual statement means in Table 3, the statements that belong to the congruence category were the statements that Maracay translated into the Four Peaks design. The following proposes that those statements in the congruence category that particularly concern use would most explicitly guide the design of the prototype houses.

Statements in Congruence Category

Because Maracay Homes operates as a semi-custom builder, they must limit the level of

congruence they can offer between their house prototypes and their target home buyers (unlike a custom builder).⁶ In the Four Peaks plan, Maracay limited their buyers' spatial choices to the six Flex Designs (Figure 5). Because of the small number of spatial options, Maracay should only offer the Flex Designs that the SFH home buyers highly value. Unfortunately, a few of LIVES's survey statements, such as "lots of choices of options" and "the ability to customize the design to my taste", only informed Maracay that they should offer design choices, and did not aid in determining *what* choices to offer. Other statements like, "flexible space; loft space or extra bedroom", "flexible space that can be change later, i.e. bedroom to great room or family room", and "garage space that could be converted to family room space", did guide the designs of Flex Designs 2, 6, and 4, respectively. However, Maracay also offers Flex Designs not derived from a known SFH home buyer preference. For instance, not one of the survey statements mentions a workroom, yet Maracay's Flex Design 5 includes a workroom. Furthermore, Flex Design 1 increases the number of bedrooms to six even though the SFH home buyer did not reflect strong agreement that the house should have "another bedroom, rather than upgrades and options".

In addition, the statements in the congruence category concerning choice only generally guide the design and do not assist in determining the purpose for the Flex Design options. For example, Flex Design 4 satisfies those who desire "garage space that could be converted to family room space", but leaves the designer questioning what family activities suit the garage, particularly in relation to the other rooms in the house. The family might use the "bonus room" for projecting movies, considering its lack of fenestrations, or for a playing pool, considering its size. Yet, the room could not accommodate small children playing since they would be out of sight from parental supervision. The "workroom" in Flex Design 5 might function well as an exercise room, but does not accommodate storage or facilitate the use of outdoor equipment (like a lawn mower or garden tools). In order for the Flex Designs to offer the maximum value for the SFH home buyers, the identification statements would need to reveal the SFH home buyers' use patterns.

LIVES's survey does include statements that belong to the congruence category and that concern the uses of rooms, such as that the family room should be "a place for children to play". These statements refer to activities like gathering, entertaining, conversing, visiting, being alone, relaxing, playing, and eating. However, we can not trace these statements through to design because the SFH cluster does not contain any high scoring dimensions from this group (although the Plain Vanilla House and Functional House clusters do). Possibly, the SFH cluster does not include highly positive dimensions concerning room use because the SFH home buyers reflect a strong preference for a house that gives them "a sense that [they] may never have to move

⁶ A semi-custom builder offers their home buyers spatial options with each prototype house design.

again". The desire to purchase a house for life, particularly for families with children (like the SFH home buyers), sensibly results in a preference for architectural adaptability. Because the SFH home buyers seek a house that will conform to their changing lifestyle, they may hesitate to designate specific activities to rooms, similar to those statements that concern use. Yet, for a designer to design an adaptable house still requires knowledge about the household's existing and anticipated uses of the house for each lifestage.

If the content of LIVES's identification statements concerned the occupants' use of the house, the survey results would guide the design of the prototype houses in several ways. First, knowledge about the household's activities would assist the designer in zoning the prototype house. One group of LIVES's statements does begin to address gradients of public and private zones. These statements refer to preferences for rooms that accommodate (in decreasing levels of privacy), being alone, intimate conversations, family gatherings, and entertaining. Gaining knowledge about the home buyer's preference for private spaces assists the designer in segregating spaces and removing activities from view (and the contrary for public spaces). In addition, two of LIVES's statements identify frequency of room use. If LIVES had included similar statements in the survey, but in relation to the whole house instead of individual rooms, then the designer could gain an understanding of the household's living patterns.

Second, if the identification statements concerned the occupants' use of the house, the survey results would assist designers to determine spatial adjacencies. Unfortunately, because LIVES structured the survey statements around room types (living room, kitchen, master bedroom, etc.), the statements guide the design within a room but not between rooms. Although a few of LIVES's identification statements concern the separation or combination of two types of rooms, these do not assist the designer in organizing the rooms in the prototype house. This would require additional knowledge about the household's activity patterns.

In order to gain knowledge of households' activity patterns would require surveying home buyers about their current and preferred daily activities. This information could be collected from the builder's home buyers during the customization period when the builder's sales representatives guide the home buyers in selecting from their spatial and product options. The households would then need to be segmented into groups that share similar activity patterns. The profiles of these groups would guide the builder's architect in designing prototype houses and options that cater to each group's living patterns.

Conclusion

This case study has demonstrated the potential for lifestyle market research to inform the design of production houses. The analysis illustrated that those survey statements that exclusively concerned the home buyer or the built form were rarely translated into design whereas those statements that concerned the congruence between the home buyer and the house were frequently translated into design. The analysis proposes that in order for the consumer market research to explicitly guide the design of prototype houses, the survey statements should concentrate on the household's use of the house.

Home builders could greatly benefit from further investing in home buyer market research. Lifestyle market research has the potential to increase a builder's profits through superior house designs that home buyers will pay a premium for as well as the potential to increase the builder's referral rate (thereby increasing the number of prospective buyers and decreasing marketing costs). Finally, home buyers would greatly benefit from house designs and options that specifically cater to their household's living needs.

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