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I, Andrew M Suszko III, hereby submit this original work as part of the requirements for the degree of Master of Architecture in Architecture (Master of).

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University of Cincinnati
The House as a Coat
- or -

Why Architects Don’t Design Houses

A thesis submitted to the Graduate School of the University of Cincinnati in partial fulfillment of the requirements for the degree of

Master of Architecture

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by

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THESIS ABSTRACT
Thesis Abstract

What if I told you that architects, even residential architects, don’t design houses? They design homes, sure – stylish, enviable, beautiful homes. But what about houses, those durable goods with stable values and long economic lives? Why don’t architect’s design houses? Is there really a difference between the two – homes and houses – beyond the semantically superficial, and does it even matter?

The architectural profession has had a longstanding flirtation with the notion of industrialized housing. Unfortunately, it’s a flirtation that has born little fruit. Many have failed and so many others are floundering, presenting modest pre-fab boxes when the market seems to ask for gaudy neo-eclectic mash-ups. The reality is that architects are not product developers, manufacturers, marketers, or business-people in the broader sense. This is unfortunate, given the scope, value, and environmental and social impacts of the American housing industry.

There were 502K houses sold in 2012. As the average price for a new house in 2012 was $292.2K, the new housing industry is annually worth about $150B, or about 1% of US GDP. In other words, the housing industry is important – so important that we are still feeling the aftershocks of the burst of the housing bubble in 2008, when new housing accounted for more than 3% of US GDP. Of the aforementioned 502K houses sold in 2012, only 47K were “owner built.” The rest, a staggering 90%, were either “built for sale” or built using contractor-backed financing. The conventional, developer-driven model dominates the housing industry, which leaves architects on the outside, looking in.

Architects provide a service - an expensive service. So-called “custom” homes come at a premium that puts them beyond the reach of most of the American public. It’s not that these people aren’t being serviced; they are, and in a big way. There are 160,000 house building businesses in the U.S. While these entities are predominantly small, there are several large, publicly-traded companies in the mix, and they are increasingly working to consolidate the industry. By implementing streamlined processes and stock plans, the larger builders produce houses that, critically-speaking, are bland, homogenous, wasteful, and that perpetuate a climate of expansion with all its accordant externalities.

Ownership of a single-family residence is the cornerstone of the American Dream. Try as we might to dislodge it, over 60% of Americans currently own their own home and recent surveys suggest that over 90% of Millennials – those U.S. citizens born from the early 1980s to the early 2000s – aspire to home ownership one day. The majority of them will not be able afford architectural services as currently conceived. To continue to ignore this market is both financially imprudent and professionally irresponsible.

This thesis examines the current state of the American housing industry, documents the historical successes and failures of the architectural profession with respect to American housing, and posits a market-oriented approach to residential architecture which aims to expand access to customized housing solutions to a segment currently priced-out of the market.
TABLE OF CONTENTS

PART I: ARCHITECTS DON’T DESIGN HOUSES
• Architects don’t design houses.
• Developers create communities.
• Builders produce houses.
• The custom home.
• The custom house?

PART II: THE DREAM OF THE MANUFACTURED HOME
• A machine for living in.
• A brief history of home.
• A brief history of failure.
• The subsequent retreat.

PART III: ARCHITECTURE IS A BUSINESS
• The end of the architect.
• The rise of the experience economy.
• The importance of customer segmentation.
• The promise of mass customization.
• The necessity of branding.
• The dawn of the integrated architect.

PART IV: PIECE BY PIECE – THE PROJECT
• Project proposal
• Client identification
• Process
• Program
• Site
• Success factors
• Endurance

WORKS CITED
PART I:
ARCHITECTS DON’T DESIGN HOUSES
“The house of moderate cost is not only America’s major architectural problem, but the problem most difficult for the major architects.”

- Frank Lloyd Wright, The Natural House (1954)

“No matter what their level of financial stability or their commitment to a good and a well-thought-out house, only a very small number of people can actually be considered as a market for our services, and identifying and contracting with these relatively few is a challenging prospect. Internalizing this fact is also an important reality.”


**Architects don’t design houses.**

The academic debate on the stand-off between the aspirations of architectural merit and the practical constraints of the budget in American housing is not new. In 1954, none other than America’s most prodigious architect, Frank Lloyd Wright, posited, “the house of moderate cost is not only America’s major architectural problem, but the problem most difficult for the major architects.”¹ At the time, he was designing the Usonian houses with an as-built price of $5,500. In contrast, his masterpiece at Fallingwater cost $166,000.² Making use of modular wood construction, polished concrete floors, and exposed walls and ceilings, Wright employed a simplified material palette in the Usonian houses. He also economized space, combining the living and dining area and eliminating the basement and attic. The result was a simple, honest, natural space, short on frills but also on cost.

The Usonian houses were a component of Wright's bigger suburban vision, a plan he termed **Broadacre City**. In stark contrast to Le Corbusier's towers in the park, the central thesis of **Broadacre City** was that horizontality, not verticality, was the predominant expression of modernism. Wright's vision for the American future was one of dispersion, not concentration,³ with “the horizontal line of the machine age, indefinitely extended as the great architecture highway and by the flat plane of the machine age expanded into the free acreage of the Broadacre City.”⁴ The big idea was not to bring the country to the city, but instead to extend the city indefinitely into the countryside. By the end of his life, Wright's position had grown somewhat extreme. He advised prospective home builders in his 1954 work, The Natural House to “go out as far as you can get. Avoid the suburbs – dormitory towns – by all means. Go way out into the country – what you regard as ‘too far’ – and when others follow, as they will (if procreation keeps up), move on.”⁵ Wright’s apparent paranoia signals the emergence of a new threat. Whereas Le Corbusier had proposed balancing the density of dwelling against the expanse of parkland, postwar American development had presented an alternative – the metastization of the city into the countryside in the ceaseless multiplication of the suburban single-family residence.

Wright's earliest residential work sits alongside his first home and studio in Oak Park, Illinois, 11 miles due west of downtown Chicago. Oak Park is a classic garden suburb, a wealthy enclave conveniently located just beyond the reach of the urban core. Close enough for the daily commute by rail or automobile, but just inconvenient enough for other modes of late-19th C. transportation, the garden suburbs promised both a piece of the countryside and access to the city. Most major American cities, especially those in the Northeast and Midwest,

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have a similar strand of Utopian, Victorian-era communities ringing the central city. Just outside Cincinnati, OH, for instance, sits the town of Mariemont.\(^6\) The community is a study in suburban garden planning, with a central square fed by radiating residential avenues, dotted with Tudor and Georgian homes. Designed by John Nolen, a student of Frederick Law Olmstead, Jr., the town was conceived as a way to channel the settlement of the emergent middle class into planned communities, rather than allowing it to spread “uncontrolled over the adjacent country, greatly to its damage.”\(^7\) In effect, Mariemont acts as a sort of reservoir for the overflow of the central city’s growth. The town is very much an early example of what we refer to today as “development.” It was, after all, commissioned by the Mariemont Company. In some sense, communities like Oak Park and Mariemont are the antecedents of contemporary suburban and exurban residential developments. However, garden suburbs have an air of authenticity about them that is absent in today’s developments. Something appears to have been lost in the transition from past to present.

To say that World War II had a profound effect on the course of American history would be a laughable understatement. However, it is nevertheless true. The United States played the part of both benefactor and beneficiary in its role as supply-nation to a devastated Europe. The Great Depression had disrupted the steady progress of the United States economy, and, in light of America’s emergent position as the manufacturing center of the world, the returning American troops had virtually guaranteed job security available to them. When pent-up demand met assured income in postwar America, the modern housing industry was born. Augmented by the federally backed mortgages of American Housing Act of 1949, the postwar boom saw the first wave of commercialization in American housing. While the architectural community pushed its modernist agenda through the construction of large-scale public housing projects such as the notorious Pruitt-Igoe in St. Louis, the developers largely satisfied the immediate demand for affordable housing with minimal consideration for architecture. Not that there weren’t architects trying. Walter Gropius and his engineering partner, Konrad Wachsmann, famously attempted to resolve the issue once and for-all with their “Packaged House.” None were ever built.

America’s major architectural problem, it turned out, was not being settled by architects. Instead, businessmen met the demand for housing by applying the power of standardization to the process of home construction. According to Witold Rybczynski, architectural professor at the University of Pennsylvania and author of The Last Harvest, “one should not underestimate the importance of Levittown. It introduced the American public to modern production building and proved that standardization, mass production, and technical innovation could be successfully used to produce houses for a large market.”\(^8\) Much has been written about Levitt & Sons, the firm behind the eponymous Levittown communities in New York, Pennsylvania, and New Jersey. Historian Marc Weiss has called the Levitts the prototypical “community builders,” identifying their role in designing, engineering, financing, developing, and selling urban environments by converting undeveloped rural land into pre-packaged communities.\(^9\) The impact of the Levitts on the modes of contemporary development will be further examined in the following section. Simply put, though, the Levitt Brothers and thousands of other like-minded business-people accomplished what the standoffish architecture community could not – they resolved the American housing problem and gave shape to the contemporary American suburb.

In 1981, architect and architectural professor Robert A.M. Stern curated an exhibition entitled “the Suburbs” at the Cooper-Hewitt Museum in New York. Stern claimed that the suburbs were a characteristically American form of urbanism. This was a polemical point.\(^10\) Following the spread of modernist ideology throughout the academic community, the conversation about the suburbs and suburban housing had long been abandoned. But Stern claimed, “The modest single-family house is the glory of the suburban tradition. It offers its inhabitants a comprehensible image of independence and privacy while also accepting the responsibilities of community.”\(^11\)

\(^6\) Cincinnati, OH is the author’s hometown and is used as a representative example.
Stern recognized what his fellow architects failed to acknowledge – that despite the architects' best efforts to the contrary, Americans overwhelmingly preferred the specific form of suburban housing which the profession overwhelmingly rejected. Inverting that same logic could produce a second, perhaps more damning conclusion – that rejection goes both ways and that architects, for their apparent disregard of societal ideals, were then, as now, also on the receiving end.

In December 1979, the median price for a new house in the United States was $61,500. Adjusting for inflation, that house would cost have cost $185,000 in 2009, a generation later. The median price for a new house sold in 2009 was $222,600, a 20% increase in the inflation adjusted value of the 1979 house. On the surface, it seems readily apparent that American houses are getting more expensive, as the value of a new American house is outpacing the inflation rate. On the contrary, houses are actually getting cheaper. The 1979 house would have been around 1760 sf, on average, a full 40% smaller than the 2009 model, which measures in at 2450 sf. In terms of construction value, the inflation adjusted cost of the 1979 home is $105/sf, a full $14 more expensive than the 2009 model. Bigger and cheaper, the American housing industry mirrors the progression of the consumer economy over the course of the last thirty years. To those seeking the accordant comforts of expanded private space, the last thirty years of American housing history has been a great success. It is, after all, the American Dream, the 20th Century version of Manifest Destiny, with ownership as the consistent ideal and privatization substituted for exploration. To others, however, suburbanization is synonymous with sprawl, blight, and a laundry list of social injustices which have been blindly arbitrated by the seemingly blameless rationality of the market.

There is no simple way to define the role of architecture in all of this. Architects, for their part, are individuals. Of the 96,015 architecture businesses in the United States, 25% are sole proprietorships, owned and operated by singular men and women trying to keep their doors open. One thing is certain, though. With only 14% of total 2012 billings recorded as Residential, the lion's share of architecture revenue is generated away from the residential market. Considering that Residential billings are split between single-family and multi-family residences, the architectural profession plays a seemingly trivial part in the American housing industry. Some have estimated that a mere 2% of residences in the United States that are built annually are truly one-of-a-kind “custom homes.” On the other hand, many of the so-called “merchant homes” constructed and sold by corporate builders were initially laid out by licensed architects. So, while the profession is not the target of the critical ire associated with the so-called McMansion era, it cannot claim credit for delivering any meaningful innovation, either. For their part, architects have had a negligible impact on the American housing industry over the last five decades.

Advanced capitalization has dominated postwar America, which has accordingly shifted from mass production to mass specialization in order to meet the preferences and expectations of discerning consumers. The American Dream, once an integral component of that story, has grown stale. At present, contractors and developers roll out homogenous, conservative residential building solutions displaced in both space and time. And the architecture community, rather than presenting attractive, obtainable alternatives, has instead become entrenched behind the costly and pretentious lines of custom design. The solution, it appears, lies somewhere in the oxymoronic no-man’s land between the two - customization for the masses. Before considering potential solutions, however, it is necessary to develop a clearer understanding of the prevailing residential paradigm.

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12 US Census Data
14 Ibid.
Developers create communities.

While it might seem obvious, it is nevertheless true that a prospective homeowner cannot build a house without first procuring the land to build on. Needless to say, this has always been the case. As location is the first, second, and third component of the flippant real-estate equation, most of the ideal spots to build a house are either occupied or exorbitantly expensive. So, unless the future homeowner has the means to dispossess the current occupant or the necessary funds to acquire an optimal parcel of land, she is, unfortunately as are most people, out of luck. The majority of single-family homeowners do not purchase land on the open market. Instead, they rely on a larger entity who can get a bulk discount on land – a developer.

As previously mentioned, commercialized development is not a new concept in the American housing market. The current development paradigm can be traced back to the turn-of-the-century garden communities on the periphery of most major American urban centers. The contemporary manifestation of this same force is evident in the second- and third-ring suburbs we see expanding in ever-distant orbits around the country’s major metropolitan areas. Of course, the prevailing logic is that this method of development is inherently negligent, as “sprawl” consumes agricultural land, increases Americans’ reliance on the highway system and the accompanying dependence on fossil fuels for transportation, and draws precious resources and tax bases away from urban city centers to the detriment of those who cannot afford to pack up and move out. Conventional reasoning would also suggest that sprawl is the worst in the American South and West, in cities that have grown substantially in the second half of the century. In fact, older cities such as Detroit, Philadelphia, and Boston saw the greatest decrease in population density toward the tail end of the Millennium, as measured in overall urbanized area divided by population. According to this measure, a decrease in total population coupled with an expansion of the urban footprint is the double-edged sword on which sprawl falls. While population decline in Detroit exacerbated the problem, in all three aforementioned cities, the real barrier to urban development was the existence of small, boundary municipalities with zoning restrictions requiring expansive lots and other barriers to development. Rather than accommodating new residents, these obstacles pushed new settlements further out into the surrounding rural areas.

As the U.S. population grew by 76 million people between 1970 and 2000, the suburbs expanded by 80 percent, accommodating the majority of that growth. Developers, with access to large-scale financing and experience in pushing projects through local zoning commissions, are in the best position to turn sprawl into economic advantage. A cursory reading of the role of the developer would suggest that all it takes to be successful in this industry is deep pockets and the wherewithal to sit through countless town hall meetings. That’s certainly a part of it. But the role of the developer is more expansive. Developers have a hand in the planning and design of new communities. They translate a design vision for a wholly immaterial neighborhood into reality. There are certainly trade-offs and compromises made along the way – many to the detriment of the original design intent. That’s where reality rear’s its head. And, developers are well-compensated for their efforts; their returns are typically the highest in the value chain from land to settled house. But, given the current paradigm, developers provide the spine onto which most new construction in the United States is grafted. Understanding the evolving nature of the development model and the accompanying trends in the homes that attach themselves to that model provides a sound historical baseline for evaluating the successes and failures of the current American housing industry.

The contemporary development model begins with a pair of brothers in a potato field in western Long Island. The first Levittown was tied to President Truman’s Veterans’ Emergency Housing Act of 1946, an initiative to “boost the volume of housing construction to record levels, and to ensure that the houses that are built rent or sell at prices that veterans can afford to pay.” The two thousand houses constructed by the Levitts were initially

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slated for rental, but popular demand for buying the houses greatly exceeded the company's expectations. As a result, “the Levitts converted the rentals to ownership, acquired more land – ultimately 4,700 acres – and in only five years built 17,400 houses.”\textsuperscript{22} The houses that that Levitts built were extraordinarily inexpensive - $7,500, which a GI could purchase with nothing down and monthly payments of only $65.\textsuperscript{23} Levittowns sprang to life in New Jersey and Pennsylvania, in addition to the original development on Long Island.

William Levitt, the older of the two brothers, was the operational brains behind the Levitt & Sons business model. During the war, William had served in the Seabees, the US Navy's Construction Battalion, building barracks in Norfolk, Virginia. Combining his experience in modular construction with principles of Fordism, Levitt devised a way to construct his homes in twenty-six discrete steps. Rather than producing houses off-site, Levitt assigned a team to each step and mobilized the crews using the latest technology, such as power tools and paint sprayers. About this method, Levitt would later reflect, “What it amounted to was a reversal of the Detroit assembly line. There, the car moved while the workers stayed at their stations. In the case of our houses, it was the workers who moved, doing the same jobs at different locations. To the best of my knowledge, no one had ever done that before.”\textsuperscript{24} In addition to gains from operational efficiency, the Levitts also employed labor-saving tactics such as payments by completed-house as opposed to hourly wages and even traded weekends and Holidays for rainouts.\textsuperscript{25} Despite the price-tag, the company still cleared $1,000 in profit on each house, and at the height of their building output, the Levitts claimed to complete a house every eleven minutes.\textsuperscript{26}

Alfred Levitt, the younger of the two brothers, was a self-taught architect and claimed responsibility for the design of the company’s houses. In 1937, at the age of twenty-five, Alfred took a leave from the family business to follow the daily construction of one of Wright's Usonian houses in Great Neck, Long Island.\textsuperscript{27} From that experience, Levitt designed the “Levittowner” the base model in the Levitts’ catalog. What distinguished the Levitts from previous residential developers was not only the process by which they standardized housing construction, but also the homogeneity of their product. At any given time, there was only a single house plan under construction, and while buyers were offered relatively minor façade and color variations, Levittowns were built with an unprecedented degree of architectural uniformity.\textsuperscript{28}

In 1958, Herbert J. Gans, a sociologist at the University of Pennsylvania, bought a four-bedroom house with his wife in Levittown, New Jersey. In 1967, Gans published \textit{The Levittowners}, a first-hand examination of society and politics in the shifting landscape of suburban America, based on his experience living in Levittown. Gans’ neighbors were generally blue-collar workers and low-level administrators, everyday Americans with a markedly different set of values from those in general opposition to suburbanization – the urban effete. About his neighbors, Gans wrote, “few actual or potential suburbanites share these attitudes, because they do not accept the business efficiency concept and the upper middle class, anti-suburban esthetic built into them.” About the degree of homogeneity in Levittown, a fundamental criticism of the mid-century suburbs, Gans directed attention instead to upper-class nineteenth century Georgian town houses, which were similarly homogenous and generally accepted by the intellectual community.\textsuperscript{29} Then, as now, the debate about the architectural merit of housing was centered on style. The logic goes that the identical nature of urban row homes acts to reinforce the street culture of the city, which is the primary expression of the urban form. As such, homogeneity in the urban context is deemed consistent and necessary for affect. In suburbia, that same phenomenon – repetitive form – yields monotony.

The Levitts – who controlled the development process from end-to-end, raw land to finished houses – provided the direction for the contemporary development model. At present, there are two prevailing models that

\textsuperscript{24} Ibid.
\textsuperscript{26} Ibid., 189.
\textsuperscript{29} Ibid., 162.
account for the majority of new housing starts in the U.S. The most common, speculative development, bears the most similarity to the model employed by Levitt & Sons. Speculative developers buy large swaths of rural land, subdivide it, build entire communities within the subdivision, and then sell those homes to prospective homebuyers. In 2013, this was a $120B business, down almost $100B from the 2006 peak at $218B, when rampant speculation and unfettered access to credit pushed the industry past its organic capacity. At present, there are over 200,000 businesses operating within this space at all scales, from single lots to expansive subdivisions. The governing variable for speculative development is inventory turnover. Businesses make a profit by adding value to the land they own and then passing the deed on that land to homebuyers in the shortest amount of time possible. Speed rules the day – both in the construction process and in housing sales, which means that quality, craft, and design are often sacrificed at the altar of efficiency and cost. While large-scale speculative developers employ architects to design their standard models, there is very little architecture in the end product.

Under the second model, the builder acts as a general contractor on land they do not own. While some land owners are undoubtedly the final home owners, many of the houses built by home builders being employed as general contractors are constructed on land controlled by speculative real estate businesses. Essentially, the model is the same as the one described above, except speculative developers with a real estate interest do not control the development process all the way to the end stage. That is, they do not engage in building, instead focusing on identifying and purchasing raw land, working with local officials to establish an acceptable plan, and investing in infrastructure and other forms of site preparation. Once the land has been subdivided, speculative real estate businesses auction off the lots through a competitive bidding process. Like the previous model, speed is paramount here as well, as speculative developers must pay off their bank loans before accruing unwanted interest. Depending on the motivations of the real estate business, the highest bidder might secure the building rights to all of the available lots. In other cases, the developer might want to ensure some variety in the community and award multiple contracts in the same subdivision. At times, the developer might have an over-arching design agenda with standards to match, which, when applied, will maintain a degree of consistency throughout the neighborhood. While design standards are intended to maintain some modicum of quality in the final product, the reality is that home builders are reticent to adjust their stock plans to accommodate costly nuances. In the end, these standards often result in surface appliques and other forms of exterior modifications which add little architectural value to the end product. In 2013, the home building industry generated $75B in revenue, which, when combined with housing development, translates to just under $200B in total business in the residential sector of the economy.

For their part, architects operate primarily under the second model, designing custom homes for clients who already own the land on which they wish to build. This is a $4.7B business for architects, as 14% of the $33.4B in billings industry-wide are attributed to residential projects. This sum is split between single-family and multi-family residences and modestly stands at about 2.5% of the total for development and construction.

**Builders produce houses.**

There is a reason that architecture is conspicuously absent in the discussion of the prevailing American housing paradigm. Most critically-minded architects would agree that the expansion of the prototypical American house has come at the expense of architecture. At the very least it has occurred in the absence of an architectural agenda. Many houses built today make use of architecture as a sort of veneer, compressing the image of the house to the front façade and largely ignoring the rest. It is a curious feature. While Americans prefer “generic traditional” houses, they also do not want to foot the bill for traditional construction. As builders continuously

economize construction methods and modify floor plans to suit shifting tastes for space, the notion that a “house should look like a house” prevails. The result is a sort of stage-set, with the front façade maintaining traditional elements and a sense of order, while the rest of the house often extends haphazardly behind. Business-in-front, party-in-back – American houses are basically mullets or “decorated sheds” as Robert Venturi and Denise Scott-Brown famously termed similar phenomena in American commercial construction.33

Witold Rybczynski begins his book The Last Harvest, a first-hand account of the residential development process, with an anecdote from his friend and Philadelphia-area developer Joe Duckworth. Speaking to a real estate class at the University of Pennsylvania, Duckworth shows the students images of suburban communities and asks them to describe what they say. When a bold student exclaims from the back, “Boring, cookie-cutter houses,” Duckworth uses the opportunity to advance the standard developer’s argument. “You’re right, the houses are similar,” responds Duckworth. “When people buy a house, they want to be able to sell it. Since they can’t afford to lose money, they’re highly risk-averse. They want what everyone else has.”34 The architecture community is, in effect, the kid in the back of the class. While the contrarian’s viewpoint is bold, it’s also made from a safe distance. Houses are the largest investments that many families will ever make. As such, there is real risk in making a bad decision, and home buyers demand relative uniformity to protect themselves against sitting on a niche product when the time comes to resell.35 Better to play it safe, buy vanilla, and let the next home owner add their own toppings. For their part, architects are not generally interested in vanilla designs and are therefore immediately eliminated from consideration for many private home builders.

What makes the home buying process all the more fascinating is that, economically speaking, “the residential real estate market is populated by amateurs making infrequent transactions on the basis of limited information and with little or no experience in gauging the fundamental value of the houses they are buying and selling.”36 Although J.D. Power and Associates rates the largest home builders, there is no such classification for different models of homes. The industry is simply too fragmented, the variety too great, and the scope too expansive to develop air-tight evaluation criteria for new and used homes. Homes come with a built-on date, but don’t have an odometer; a home appraiser is not a home inspector.37 In general, existing houses are valued based on prevailing real estate prices and are “comp’ed” against other comparable houses in the area that have recently sold. New homes are “costed” using reproduction estimates. In this sort of empirical environment, it’s no wonder that home buyers are cautious. In the absence of a comparable model, the estimated value of their home might be subject to the whim of a completely subjective appraisal. In addition, appraisals are completely tied to the local market, as houses are location-bound. So, whereas the Kelley Blue Book Value for a particular make and model of an automobile is dictated by national markets, two identical homes in completely different locations can sell at wildly disparate prices.

Large-scale builders understand and are uniquely positioned to take advantage of the asymmetric information that distinguishes the real estate market. Without delving into the economics, the sellers have an advantage. As such, “a national builder sells the same four-bedroom house for $300,000 in upstate New York, $450,000 in Chester County, Pennsylvania, more than $750,000 in Prince Georges County, Maryland, and almost $1 million in Loudon County Virginia. The difference is not the construction cost (which in all cases is in the neighborhood of $90,000), but the cost – that is, the availability – of permitted land and the strength of demand.”38 In this environment, high-demand markets subsidize lesser-demand ones and two home buyers in different markets pay radically different prices for the same product. Of course, the real difference between the two isn’t the house, it’s the land the house sits on. Even adjusting for variances in land value, though, the two identical homes will have different valuations depending on local demand and market preferences. In effect,
although houses are produced, they don't behave like conventional products.

So, the national builders cater to the neutral tastes of the public and have the capacity to take advantage of inconsistencies across regional markets, while maintaining consistent offerings. The merchant builder model is structured on these two principles. To paraphrase Dwight Schar, the founder of NVR Homes, one of the nation's largest merchant builders, “our business is like a hamburger stand. We make hamburgers and cheeseburgers. That’s it. We don’t customize the designs of our houses; except for the specific options that we offer with each model, they’re absolutely fixed.”

According to Mike Linthicum, a representative of Ryan Homes (a division of NVR), Ryan can deliver a house for a construction cost of $36 – $40 per square foot. That is among the most competitive rates in the country and considerably lower than the $60 – $70 per square foot cost of comparable regional builders. As mentioned by Mr. Schar, NVR standardizes its houses. The company prefabricates framing and panelized walls in off-site facilities in six states. The wall panels employed by NVR are not modular, and therefore can be assembled to achieve a variety of spatial configurations. That flexibility, coupled with the fact that exterior and interior finishes are completed on site means that although NVR prefabricates the majority of their houses, the final products in no way resemble “prefabs.” Shipments arrive to the site in phased packages, the first includes the pre-cut structural components. Later packages include doors and windows, siding and insulation, and later, trim and millwork. Each package contains precisely the quantities required and arrives according to a strict schedule. In this way, NVR controls quality, maximizes its labor efficiency, minimizes the threat of theft and waste, and avoids delays and material spoilage that might result from inclement weather. In effect, NVR, like many of the other national builders, makes use of the same tactics that the architecture community has been clamoring for since the 1920s. The only difference is that their product doesn’t look “architectural.”

According to John Gertner, author and columnist for the New York Times, the home is “probably the last item in our economy that has yet to be marketed and branded on a national scale to consumers.” That might not hold for long. In 2005, at the time of Gertner’s article, Wall Street analysts had predicted that by 2015, over half of all the residences built in the U.S. would be completed by the corporate merchant builders. While pessimists will decry the downfall of the “mom and pop” building company, the reality is that these businesses are largely inefficient and highly risk-averse. Worse yet, they have not introduced significant innovation, nor have they improved productivity over the course of the last 50 years. In fact, productivity in the US building industry has been declining since 1964. The culprit, again, is asymmetric information, which Barry LePatner Illustrates in his scathing analysis of the construction industry: Broken Buildings, Busted Budgets. LePatner begins:

“The preponderance of asymmetric information favoring contractors has allowed small inefficiently operated firms to stay in business, even thrive, often despite a lack of traditional business acumen. The contractor’s knowledge advantage over the owner creates perverse incentives whereby the contractor can be systematically rewarded for inefficient behavior since there are typically few real consequences to deter such actions. The companies that do the best financially are often not those that build the best, but those that are the best at bidding strategically to win the job for the right to subsequently induce owners to pay more than the amount specified in the base contract… In other words, they become monopolists after signing the contract. The competition at the bidding stage, therefore, is in a sense anti-competitive.”

Wholesale optimism is suspect in a market where buyers are systematically disadvantaged. That being said, a more optimistic viewpoint might suggest that after the fallout of the smaller enterprises, the American public might finally begin to see true product differentiation and technological innovation originating from the merchant building community as national corporate interests jockey for position in a more competitive building

40 Ibid., 201.
43 Ibid., 37.
industry. In other industries, differentiation is a euphemism for design. Perhaps the time has come for actual design to creep back into the home building equation?

Custom homes.

The prevailing commentary on the historical failings of the architecture profession traditionally proceeds according to the following logic. Architects were once “master builders,” seemingly omnipotent designers who could conceive, design, coordinate, and manage an entire project through a superior understanding of the entire building process. Then, architects became obsessed with style. Trained in the Beaux-Arts fashion to be primarily sensitive to the detailing of elevations, architects first ceded their understanding of structural integrity to instead focus on exterior ornament. Next, architects, having sacrificed the pursuit of space for the detailing of surface, ceded their conception of craft. Finally, having concentrated on the artistic, instead of scientific, arm of the profession, architects were easily wrested of the science of construction by engineers and materials scientists. They would never regain their grip on these aspects of the industry. Architects, once cerebral, stoic, savvy watchdogs for their clients throughout the construction process had been neutered through their singular focus on style. Tragic, no?

In all of the generalizations on the role of the architect, there seem to be two critical, dynamic dimensions that are never adequately addressed: technology and the demands of the client. For all the bluster and hyperbole, the seeming demise of the architect sounds more like the fragmentation of one job into a series of jobs because technological advances pushed the capacity of the position beyond the capacity of the individual. There is no other position on Earth where mere humans strive to be “master builders.” The whole thing smacks of religiosity and is glaringly, gallingly ego-centric.

The second fundamental consideration that is missing in the story of the demise of the architect is the demands of the client, narrowly, and the market as an aggregation of those demands, broadly. In all of this obsession with the notion of the “master builder,” there is very little discussion about the historical demand for architectural services. Were these “master builders” “master building” everything? That seems unlikely. The public is therefore misled when confronted with sweeping declarations of the following nature:

“In engineering and architecture programs alike, students learn how to conceive and design projects, not to manage them. They often do not learn how to properly integrate the technical necessities of a building (HVAC, lighting, or life safety systems) or how to successfully coordinate their consultants’ designs for such systems with their design concept. Yet this is what the world demands in its buildings. Little wonder that by the early 1970s architects designed only 2 percent of single-family dwellings and led only 5 percent of all construction projects in the United States. Their typical product was not the built building but its paper facsimile.”

Putting aside for a moment the notion that comprehensive management can be taught in a purely academic environment, there is no way of knowing whether or not 2 percent of single-family residences is an organic rate for architectural services. Surely 2 percent is too low and therefore the architectural profession has failed, yes? Maybe? No? There really is no way of knowing. To this point, the author’s assertion has been that architects play a very small role in the housing industry. It seems like they did in the early 1970s, at least. If architects presently design about 2 percent of single-family residences constructed annually, then one could make the further assertion that architects play a very small but stable role in the housing industry.

Residential architects design so-called “custom homes” for their clients. As described in the preceding sections, these clients almost always have full ownership of the land upon which the home will be situated. As such, a

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45 It can’t.
commissioned architect employs the full scope of his or her design services, taking the nuances of both site and client into consideration. The custom home is therefore tailored to the individual preferences of each client and is a reflection of the collaboration between the residents and the architect. Architecture is a service business, so, naturally, custom homes command a premium over comparable houses produced by merchant builders. The cold reality is that, at least currently, only the wealthy can afford an architect's services. Services come at a cost and, unfortunately, that cost is prohibitive. End of story.

Or is it? In his book The Architects Guide to Residential Design, Michael Malone, AIA, poses the following question:

“Do you think that the quality of urban and suburban life in the United States would be better if we (licensed architects) designed all the houses built in this country specifically for the sites and programs of the individual homeowners?”

Better is a loaded word. More artistically conceived? Probably. More engaging? Potentially. More socially and environmentally responsive? Hopefully. But, Malone asserts that if licensed architects actually “designed all the houses built in this country” the outcome would encompass the reality of fewer people being able to afford to own and live in houses. Architecture is simply too expensive – not only are the services an additional cost that the owner must bear, but so, too, are the added cost of unraveling the gains made by standardizing building practices. Along this logic, the only way that personalized architecture can be made affordable is to reduce the architect's fees, alter the nature of the architect's services, or revolutionize building practices in such a way that unique outcomes can be manufactured from standard means.

Malone, for his part, seems skeptically allied to the traditional definition of the “professional” architect. That is, an “architect,” like a lawyer or a doctor is a master in a specialized field of practice and, in exchange for this mastery and the personal autonomy that accompanies it, upholds a code of moral rectitude. Lawyers are trusted with full disclosure. It is their moral obligation to protect their clients' privacy. Doctors are trusted with the sick and dying. It is their moral obligation to use every means possible to ensure their clients' livelihood. Architects are trusted with safeguarding the public. It is their moral obligation to ensure that the built environment doesn't collapse on people or trap them in the event of disaster. Lawyers and doctors provide immediate services to people in grave situations. Architects provide an antiquated form of liability insurance and, as addressed above, have even ceded the structural portion of that obligation. By grouping themselves with lawyers and doctors, the architecture “profession” grossly inflates its necessity. Of course, this is an oversimplification. But, so too is the notion of the “licensed architect.” Architects today are more like product designers than they are doctors. It's not surprising that they are compensated accordingly – architects aren't resolving life-and-death situations in real time.

While the reasoning above might seem to debase the role of the architect, the reality is that there is no “the architect.” There are architects practicing architecture in all sorts of ways – new, old, strange, sterile, fantastical, impractical, and obsolete. Architecture, though it adheres to a somewhat stringent professional classification, is actually quite flexible. It is precisely this flexibility that will allow architects to reimagine the nature of the relationship between architect and client. Michael Malone is absolutely correct in identifying the cost prohibitive nature of the architect's services as they are currently defined. But, Malone is also a defeatist. In the opening to his book, he seemingly concludes:

“… the idea of everyone living in an architect-designed house is a fantasy. And even if it could come true, we may not be the only people qualified to determine what a house is for anyone, let alone for everyone... Although we probably don't perceive it this way, our professional services as architects are too expensive, and in the framework of traditional practice (with all the phases of services we historically provide) we are really not positioned to be the best providers of housing for most people. No matter what their level of financial

47 Ibid., 2.
48 Ibid., 2.
stability or their commitment to a good and a well-thought-out house, only a very small number of people can actually be considered as a market for our services, and identifying and contracting with these relatively few is a challenging prospect. Internalizing this fact is also an important reality."

In effect, what presents itself as the manual on residential architectural practice begins by narrowly classifying its audience. If architects design 2 percent of houses in the U.S., it might be that architects have chosen to design only 2 percent. Or, maybe even more specifically, architects have chosen to design for the 2 percent – those Americans wealthy enough to foot the bill for the profession. The sober reality is that the 2 percent, as illustrated by the growing income inequality in the U.S., is quickly becoming the 1 percent. Isolating residential architectural practice thusly is neither socially responsible nor financially prudent. While the “idea of everyone living in an architect-designed house” might be a “fantasy,” why not indulge the fantasy? Why not try to expand the scope of architectural services? Why not try to grow the size of the market? Why not try?

The custom home is too specific, too expensive, too exclusive. The time has come for architects to re-engage with the problem of designing the custom house – the house as a mass-customizable product. The old rules don’t apply. We have to change the nature of the practice. We have to change the nature of the process. We have to change the nature of the client relationship.

Custom houses?

Whereas the problem of housing was a principle motivation of the modern movement, the contemporary architectural vanguard has largely distanced itself from the challenge of providing consumer-oriented residential solutions for contemporary Americans. This disengagement is due to a variety of factors. For starters, the critical failure of the suburbs and the neglect of the city shifted the primary focus of the architectural community away from the challenges posed by remote, residential development. As such, contemporary architecture has failed to provide a viable alternative to suburban development save a general mandate against it. Acting in parallel, the developer community has worked tirelessly to improve the efficiency of construction by making use of standardized processes, products, and building plans. Accordingly, it seems that design has been costed out of the equation. To compound matters, recent shocks to the housing market and the looming shadow of re-sale value have made consumers leery of leaning forward on progressive models or alternatives such as pre-fabricated residences. As a result, the residential housing solutions most available to home builders are inexpensively constructed, uniformly considered, architecturally regressive models rooted in antiquarian notions of what the house should be. The present state of the housing market stands in stark contrast to shifts in the broader market, where people are consistently paying a premium for unique, individual consumption experiences.

The custom house, unlike the custom home, is a response to these forces. Custom houses, like iPhones, Nike shoes, and Honda Civics are not one-of-a-kind products. Instead, the custom house is a genetic thread of a larger genealogical family, born from the DNA of that family, but nevertheless possessing the personality and identity of its own being. If architects are going to successfully engage with clients in the 21st Century, the profession must abandon its obsession with novelty. Instead, architects must focus on streamlining designs so that their clients might augment each product according to their individual tastes. In order to differentiate the profession from the merchant builders, architects can and should manufacture progressive, intelligent models that offer substantial benefits to house buyers in both form and function. As illustrated by the public’s obsession with technology in other industries, architects might benefit from forging partnerships with the tech sector in order to determine which innovations therein merit integration into the fabric of the house. The structure of American society is shifting as a response to technological progress and social change. If architects are going to provide meaningful housing solutions to meet the demands of 21st Century buyers, they, too, must shift.

PART II: THE DREAM OF THE MANUFACTURED HOME.

“**The house as a home is merely outer clothing, which should fit as an overcoat should, without wrinkles and creases that show their ready-made character.**”

- Ellen H. Richards, The Cost of Shelter (1905)

“One can be proud of having a house as serviceable as a typewriter.”

- Le Corbusier, Towards a New Architecture (1923)

A machine for living in.

For the better part of a century, architects – both professional and amateur alike – have pursued an American Dream of their own: the dream of the manufactured home. The idea that houses could roll off assembly lines has obvious roots in the auto industry. Superficially considered, houses and automobiles are extremely similar. They are both expensive, durable goods with relatively standard programs and technical specifications. Both industries stood to benefit from the standardization of parts and components and the mass production and assembly of those parts into homogenous goods. Indeed, the auto industry was largely inaccessible to the public before Henry Ford introduced the assembly line and delivered on his promise of producing a car that even his workers could afford. Considered in contrast, the traditional houses of the day must have appeared antiquated. Houses, after all, had changed little in the preceding centuries, and the notion of what a house was and, perhaps more central to architectural history, what a house looked like had been cemented in Western minds.

Dissatisfied with historicism and the tidal predictability of novel styles, the modernist architects of the early 20th Century drew inspiration from the automobile industry, which they viewed as a triumph of technical methodology over staid traditionalism. In *Towards a New Architecture*, Le Corbusier summarized the problem thusly:

“**Architects work in ‘styles’ or discuss questions of structure in and out of season; their clients, the public, still think in terms of conventional appearance, and reason on the foundations of an insufficient education. Our external world has been enormously transformed in its outward appearance and in the use made of it, by reason of the machine. We have gained a new perspective and a new social life, but we have not yet adapted the house thereto.**”

With the publication of *Towards a New Architecture* and the design and construction of his *L’Espirit Nouveau* for the 1925 Exposition Internationales des Arts Decoratifs et Industriels Modernes, Le Corbusier sought to eradicate convention through architectural revolution. Le Corbusier cited advances in what he perceived to be sister industries to architecture – automobile and airplane manufacturing and shipbuilding – as well as an acceptance of rational approaches to both engineering and business. Architecture, situated alongside these adjacent practices, appeared then, as now, handicapped by its more noble call to harmonizing beauty. To Le Corbusier, the other industries and accordant professions had advanced by applying novel technologies to pressing needs. For example, “the airplane shows us that a problem well stated finds its solution.” Without a corresponding need, the problem of the house had not been clearly articulated, yet. To that end, Le Corbusier set about defining the problem facing European housing at the dawn of the 20th C.

He began by defining the “standards of the dwelling,” which consisted of:

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51 Ibid., 289.
52 Ibid., 111.
PART II: THE DREAM OF THE MANUFACTURED HOME
“A house: a shelter against heat, cold, rain, thieves and the inquisitive. A receptacle for light and sun. A certain number of cells appropriated to cooking, work, and personal life.

A room: a surface over which you can walk at ease, a bed on which to stretch yourself, a chair in which to rest or work, a work-table, receptacles in which each thing can be put at once in its right place.

The number of rooms: one for cooking and one for eating. Once for work, one to wash yourself in and one for sleep.”

Against this relatively unassuming set of criteria, Le Corbusier contrasted what he perceived to be a host of ills plaguing the contemporary home. He railed against the technical deficiencies of inoperable windows. He railed against the furniture, and the notion of the home as a sort of “furniture store.” He railed against the wallpaper, which prevented the viewer from enjoying his art collection. And he railed against the monstrous horrors of overwrought chandeliers when concealed lighting would suffice. The sum total of these deficiencies, Le Corbusier concluded, bored the “modern” men and women and pushed them from their homes to pursue pleasure elsewhere. Le Corbusier concluded, “the existing plan of the dwelling-house… kills the spirit of the family, of the home; there are no homes, no families, and no children, for living is much too difficult a business.” A dire conclusion, indeed.

While Le Corbusier should be commended for challenging the status quo, it is questionable whether or not his intentions were motivated by a true desire for economy in the home, as he claimed. On the surface, at least, it seems that Le Corbusier’s primary objective was to rally against traditionalism. He deemed the spatial arrangements of the conventional houses of the day as inefficient, but that inefficiency was largely attributed to the accumulation of furniture and ornament. A more critical reading of Towards a New Architecture reveals a fetishization for the stream-lined, the novel, the clean, and the minimal. The preceding style wars had left behind a battlefield riddled with detritus and clutter, one movement stacked upon the remains of its predecessor. Le Corbusier aimed to clear the debris; in the privacy of the home, the clutter accumulated unchecked.

By advancing an agenda of standardization, Le Corbusier sought progress through order. Those standards, however, came at the expense of individuality and pursued an impractical ideal. In the end, people prefer their homes slightly disheveled, because they better suit the actual behaviors and habits of the inhabitants. As it turns out, Le Corbusier missed a wider mark. While, “all men have the same organism,” they do not have the same “function,” nor the same “needs.” It is the imperfections of men and women that make each unique and that evade the imposition of Le Corbusier’s optimized standards at every turn. It’s difficult to engineer a so-called “machine for living in” when the specifications vary with every iteration. In challenging historicism, Le Corbusier neglected the fact that history is the story of humanity. As it pertains to housing, the story reveals a deeper understanding of fundamental human comfort.

A brief history of home.

In attempting to order the standards of the home, Le Corbusier developed a punch list of the programmatic functions and technical requirements that a house must be designed to accommodate. A house is first and foremost a shelter – a structured envelope that protects us from the elements. But a home is not designed with only the elements in mind. A home is not the measured composition of programmed space, nor can a home be produced through technical proficiency or economic efficiency, alone. Homes nurture humanity by offering their inhabitants comfort. In Home: A Short History of an Idea, Witold Rybczynski concludes:

53 Ibid., 115.
54 Ibid., 117-122.
55 Ibid., 123.
56 Ibid., 136.
57 Ibid., 107.
“We should resist the inadequate definitions that engineers and architects have offered us. Domestic well-being is too important to be left to experts, it is, as it has always been, the business of the family and the individual. We must rediscover for ourselves the mystery of comfort, for without it, our dwellings will indeed be machines instead of homes.”

If the home evades outright definition, then Rybczynski aims to reveal its intangible nature through description. Writing in 1986, Rybczynski identifies in postmodernism an unmet deeper desire for traditional forms. He posits that this craving is not born of outright nostalgia, but rather a dissatisfaction with the environment that modernism created. In a word, modernity is uncomfortable. The standardized path laid out by Le Corbusier and taken by the modernists had stripped the environment of any evidence of humanity. To Rybczynski, comfort is not simply a physical notion. In fact, comfort in the physical sense can only be defined in its absence – in discomfort. Comfort is rooted in domesticity. Rybczynski asserts that modernism, through commodification, has undermined those roots by the application of its single-minded aesthetic agenda. According to Rybczynski, the idea of comfort itself had been lost at the expense of style and could only be reinstated through a “reexamination not of bourgeois styles, but of bourgeois traditions.”

The concept of the Western home was born from the rise of the bourgeois class and the concordant demand for privacy. Manor houses were largely composed of open spaces that transitioned from parlor to banquet hall to sleeping quarters and back again. And, besides, only the wealthiest members of society could afford a house. The rest were either servants or tended the open land, the former co-habitating in close quarters near the manor house, the latter in simple huts which served simply as a first means of protection against the elements. The rise of a strong, republican middle class eventually demanded some modicum of privacy from their dwellings, the foundation upon which the idea of comfort would later spring. Rybczynski identifies the 17th Century Dutch merchant class as the birthplace of the contemporary family unit. In doing so, he cites John Lukacs who notes, “Domesticity, privacy, comfort, the concept of the home and of the family: these are literally, principal achievements of the Bourgeois Age.” Intimacy was born of privacy and led to the creation of domestic family units, and with them, the more feminine notion of domesticity. Identifying the feminine nature of the domestic home is an important distinction for Rybczynski, which would later inform his critique of modernism.

From privacy and domesticity, Rybczynski draws a line to comfort, citing its origins in the English countryside. As late as the 1870s, the British still claimed that comfort was a predominately English trait. Robert Kerr, for instance, asserted in The Gentleman’s House, “What we would call in England a comfortable house is a thing so intimately identified with English customs as to make us apt to say that in no other country but our own is this element of comfort fully understood.” Comfort, still considered in cultural terms, had yet to be equated with any physical characteristics of the dwelling itself. Physical comfort in the home was largely still delivered by a servant class, who lit the candles, tended the fireplaces, delivered hot water, and emptied the chamber pots. Rybczynski expounds, “The eighteenth-century home incorporated no major innovations in domestic technology.” Instead of technical improvements in lighting, ventilation, and sanitation displacing the servant class, those technologies would follow the large-scale departure of the servant class to seek better fortunes in the Americas and beyond. When technology would finally enter the home, it did so under the purview of the engineer, and the professional architect was noticeably absent in the process.

At the same time, other related industries, notably furniture, were beginning to seek innovative designs under the banners of “utility,” “convenience,” and “efficiency.” Industrialization had spread to craft production, and standardized componentry and processes were increasingly manufactured by competent tradesmen. Controlling

59 Ibid., 13.
60 Ibid., 220.
61 Ibid., 221.
66 Ibid., 145.
all facets of their business, Rybczynski notes that these manufacturers stood in stark contrast to the architects of the day.\footnote{Ibid., 126.} For their part, professional architects of the 18\textsuperscript{th}-19\textsuperscript{th} C. were mostly academic aesthetes, ignorant of technical details and methods of construction. The profession was largely practiced by gentlemen, who were neither trained, nor interested in the practicalities of heating, lighting, and plumbing. As such, “domestic technology fell into the gap between the architect and the (interior designer).”\footnote{Ibid., 126-128.} Unsurprisingly, this oversight would not be missed by those that actually worked in the home – the American women of the mid-19\textsuperscript{th} C.\footnote{Ibid., 160.}

In 1849, Catherine Beecher published \textit{A Treatise on Domestic Economy}, the first in a series of manuals written by women for women on the subject of managing the home more efficiently. Targeted at young housekeepers of moderate means, the manual included house plans which were uncharacteristically small for the time. Pre-dating technological aids, Beecher made the obvious but insightful observation: “Double the size of the house, and you double the labor of taking care of it.”\footnote{Catherine E. Beecher, \textit{A Treatise on Domestic Economy: For the Use of Young Ladies at Home and at School} (New York: Harper, 1849), p. 259.} In contrast to the prevailing European image of the home as a sedentary male preserve, American women would “demand comfort not only in domestic leisure but also in domestic work.”\footnote{Witold Rybczynski, \textit{Home: A Short History of an Idea} (New York: Penguin Books, 1986), 158-160.} Beecher and her sister Harriet Beecher Stowe would later publish \textit{The American Woman’s Home} in 1869, which would layer the introduction of technological aids into the home over the broader idea of the economization of space.\footnote{Catherine E. Beecher and Harriet Beecher Stowe, \textit{The American Woman’s Home} (New York: J.B. Ford, 1869), 25.} Where architects of the day were ignoring technical advancements, the Beecher sisters, characteristic of a wider body of users, were calling for the wholesale implementation of technology in order to better manage a comfortable home.

By the turn of the 20\textsuperscript{th} C., the movement initiated by the Beecher sisters had found an improbable ally in the management practices espoused by Frederick Winslow Taylor, an engineer from Philadelphia. Taking the idea of standardization down to the smallest possible increment of labor – the work process – Taylor sought to increase productivity by optimizing the efficiency at which workers completed individual tasks. To the “house-experts” of the day, the principles of Taylorism promised a methodology to rationalize and organize housework in order to complete the day’s work with less effort in less time.\footnote{Ibid., 167.} The women of the day – Christine Frederick, Mary Pattison, and Ellen H. Richards – referred to themselves as “domestic engineers,” thereby allying themselves with the scientific methodology conspicuously absent in architecture. By the early 1900s “Home Economics,” as the practice of managing the home would later be called, was taught in many of United States’ most prestigious universities, including Columbia and MIT.\footnote{Ibid., 170.} While the thought of training women to be house-bound domestic engineers might seem offensive to modern sensibilities, the more salient point is that the people closest to the problems of the home were engaged in solving them. Their success would reduce the hours necessary to maintain the home, and eventually free American women from the isolation therein.\footnote{Ibid., 171.}

In 1905, twenty years before the Exposition Internationales des Arts Decoratifs et Industriels Modernes, Ellen H. Richards wrote:

\begin{quote}
“the house as a home is merely outer clothing, which should fit as an overcoat should, without wrinkles and creases that show their ready-made character.”\footnote{Ellen H. Richards, \textit{The Cost of Shelter} (New York: Wiley, 1905), p. 45.}
\end{quote}

The house as a home. The house as a coat. The house as a fabric – flexible and personal. While Le Corbusier would later call for the full standardization of the house within the rigid (in)tolerances of the machine, Richards stopped short of mandating such extreme absolutes. Le Corbusier conceived of the mass-production house, but alongside the product, he also exclaimed, “We must create the mass production spirit… the spirit of living in mass-production houses.”\footnote{Le Corbusier, \textit{Towards a New Architecture} (Lexington: BN Publishing, 2000), 227.} Even Le Corbusier recognized the desire for individuality. For Richards and the
other domestic engineers, that desire was an opportunity for expression. On the contrary, for Le Corbusier, it was an obstacle that must be overcome through subjugation. To contemporary eyes, the “spirit” of uniformity reads like some sort of lightly-considered fascism. According to Rybczynski, Le Corbusier’s principle failing was his misconstruing efficiency with appearance. To wit: “Like most architects, Le Corbusier did not understand, or would not accept, that the advent of domestic technology and home management had put the whole question of architectural style in a subordinate position.” If one is to take Rybczynski at his word, Le Corbusier, through his focus on machine-wrought technological efficiency, was actually behind the times. The problem had already been resolved:

“…the history of physical amenities can be divided into two major phases: all the years leading up to 1890, and the three following decades. If that sounds outlandish, it is worth reminding ourselves that all the “modern” devices that contribute to our domestic comfort – central heating, indoor plumbing, running hot and cold water, electric light and power and elevators – were all available before 1890, and were well known by 1920. We live, like it or not, on the far side of the great technological divide.”

Not only are we on the far side of the divide, so was Le Corbusier. Effectively, then, one could make the argument that Le Corbusier’s argument was principally a crusade against the persistence of ornament. Efficiency could be equated with simplicity and simplicity with virtue, and what’s more virtuous than a clean, white wall? The problem with a white wall is that, like comfort, it can only be defined in its absence. White walls stand against the decorous clutter of the alternative, but in their opposition, white walls actually have very little to say. Worse yet, white walls stand to disconnect the present with the past. If history is evolutionary, then discontinuity is a means of extinction. By attempting to erase the past, Le Corbusier and the modernists that followed effectively eliminated the vestiges of comfort that had evolved alongside the traditional styles. In American housing, it is therefore of little wonder that modernism was largely rejected by the public; they were comfortable with their traditional forms. Rybczynski concludes, “It may be enough to realize that domestic comfort involves a range of attributes – convenience, efficiency, leisure, ease, pleasure, domesticity, intimacy, and privacy – all of which contribute to the experience; common sense will do the rest.” In other words, comfort is actually quite complex, but don’t overthink it.

**A brief history of failure.**

If ever there was a time when white-washing the recent past was called for, it was during the recovery period immediately following World War II. The memories were vivid, the wounds were fresh, and the European backbone was broken. Collectively, the Western world was weary of traditionalism and wary of its recent misappropriation by Hitler and Mussolini (and later Stalin) to validate their fascist agendas. With its fundamental mandate against classical appearance, Modernism was the victor in a style war fought on terms completely alien to architecture. According to Rybczynski:

“it became a “Free World” style, representing democracy and America in the Cold War. In this role it was not seen as just another architectural style; not only white in appearance, it was morally unblemished as well. It was a break with the past, a past that was increasingly seen as worthless and immoral, at least architecturally speaking.”

The spoils of the style war were commissions and appointments to the heads of major architecture schools. Both Walter Gropius and Mies van der Rohe, the preeminent Modernists of their day, expatriated from Germany into the welcome arms of the American social and academic elite. Former students of Peter Behrens, Mies and Gropius brought industrialist agendas with them to the United States. Gropius, in particular, saw an opportunity

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79 Ibid., 231.
80 Ibid., 202.
to utilize industrial manufacturing methods to resolve the emerging housing shortage in the United States. Housing was not a new concern for Gropius, nor was the pursuit of social equality, of which affordable housing is a constituent component. He had even used the house to illustrate the Bauhaus principle of functionalist design in his earlier writing. According to the Principles of Bauhaus Production, “The nature of an object is determined by what it does. Before a container, a chair or a house can function properly its nature must first be studied, for it must perfectly serve its purpose; in other words, it must fulfill its function practically, must be cheap, durable and ‘beautiful’.”81 Together with his business partner, Konrad Wachsmann, an engineer, Gropius set about working on the “Packaged House.” According to Ryan E. Smith, author of Prefab Architecture: A Guide to Modular Design and Construction:

“the team’s message was that architects could take a project from conception to production, perhaps in the fashion of Brunelleschi, the master builder of centuries earlier. Complete creative authorship and cost effectiveness seemed a possibility, at least on paper. The message Gropius and Wachsmann sent is that they could succeed with prefabrication in the least of the architectural typologies – housing – then maybe architecture could have more of an influence on the lives of Americans everyday.”82

Whereas Le Corbusier had set out to prove that modern architecture should look modern, Gropius and Wachsmann set about designing a house to be manufactured under the often-conflicting constraints of economy and beauty. Under the mentorship of Gropius, Wachsmann produced the blueprints for a house-building system that would also serve as the underpinnings for an entire house-building corporation – the General Panel System Company. Wachsmann’s system was comprised of a family of ten 40-inch panels which, when assembled with a patented bracket, could yield a variety of housing outcomes. After a fundamental disagreement on the role of technology in architectural production, the two men parted amicably. Wachsmann, on the brink of bankruptcy, eventually sold the rights to his system to the Celotex corporation, which was unable to sufficiently manufacture any units within the specified tolerances of the system. Despite plans to manufacture upwards of 8,500 houses, none were ever built.83

In the face of the mounting failures in the arena, the architects and engineers of the 1940’s and 1950’s soldiered on. From 1944 – 1946, Buckminster Fuller, the famed mathematician and engineer, revisited his flawed Dymaxion House in the Beech aircraft factory in Wichita, Kansas. His product, the Wichita House, marked the first significant departure from the panelized strains of houses that had been conceived to date. The first truly modular housing system, the Wichita House was conceived as a “dwelling machine,” a market position that the Beech Company ultimately decided not to pursue, reasoning that the public was not ready “to inhabit a machinelike object.”84 Yet again, despite two years of design development, no houses were ever sold.

Marcel Breuer, for his part, produced two unique housing systems, the “Yankee Portables” series and the “Plas-2-Point House,” before conceding defeat. In resignation, Breuer commented that he believed that the future of the prefabricated house would fall to “commercial builders who don’t bother with architecture.”85 Alternatively, Ray and Charles Eames proved that architects and designers could develop feasible housing solutions within the industrial palette, provided the client was amenable to living in a fabricated home. With Case Study House Number 8, the Eames’ designed and assembled a house entirely from the catalogue of industrial products on the market. Instead of languishing over an entirely novel approach to design detailing, the Eames opted to focus on simultaneously maximizing interior space and minimizing cost. Ultimately, the house was a success but also a novelty. In this case, the clients were also the architects and so Ray and Charles had already consigned themselves to living in the work they produced. While the house might be replicable and scalable, it was conceived in isolation and did not attempt to address the constraints of the broadly considered housing market.86

83 Ibid., 80 – 83.
84 Ibid., 90 - 93.
85 Ibid., 86 – 89.
86 Ibid., 94 - 97.
In the time since, despite countless subsequent efforts to the contrary, no significant progress of any considerable scale has been made in the arena of industrialized housing. Architects have not shouldered the entire burden of this failure. Developers, engineers, and businesspeople have also tried and ultimately fallen short of cracking the code. The attempts and ultimate shortcomings of Sears and Roebuck and later the Lustron Corporation provide illustrative examples of business models built on low-cost, manufactured houses that ultimately folded in the market. In *Prefab Architecture*, Smith identifies five lessons to be gleaned from the attempts at prefabricated housing to date. In order, they are as follows:

1. Proprietary systems do not work for mass housing.
2. Prefabrication is about design and development of a technology.
3. Prefabrication has more to do with a business plan than a product.
4. Prefabrication should be warranted by situation, including client, location, and labor context.
5. Prefabrication must come from an integrated process.

To these lessons I would conclude with a sixth point, perhaps in summation. Prefabrication must be driven by market demand, rather than supplied deus ex machina from the mind of the architect.

The subsequent retreat.

In the intervening years, the architectural profession has largely retreated from the challenge of designing attractive, affordable houses for the nation’s middle class. Instead, the profession has focused its attention to the periphery, and the majority of residential architecture at present is either designed for low income groups or for the wealthy. While the former is certainly admirable and the latter financially prudent, the fact of the matter is that the architectural profession does not actively engage with the majority of the American population. As we’ve already heard from Michael Malone, the most clear-cut rationale for the profession’s absence in the middle income market segment is that architectural services are simply too expensive for these prospective buyers. Couple the architectural premium with the accessibility restrictions of the developer-driven model and one can easily see that middle-class homebuyers do not possess the individual buying power to access the “architectural” portion of the market.

A second, more pessimistic viewpoint is that middle-class homebuyers simply lack the taste for architecturally-conceived houses. As the overwhelming majority of American homes built today are rooted in a sort of antiquarian eclecticism, the logic might follow that middle-class homebuyers prefer these models to alternative, more progressive options and that the market has responded in kind. If that is the case, then it seems that Americans have a firm notion of what the home should consist of, what it should look like, and how it should operate. Given the re-sale risk embedded in home ownership, American are financially invested in status quo residences. But, the question remains: do Americans prefer conservative residences, or are they simply settling for them based on a debilitating combination of inaccessibility and risk management? If contemporary consumer culture has taught the architectural community anything, it is that sweeping generalizations about consumer preferences are not only invalid, they are a woeful handicap on progress. The success of Dwell Magazine and, more recently, the rise of pinning platforms like Houzz.com and Pinterest illustrate that there is a strong desire for design-forward residential products within a certain segment of the market.

Given the presence of the unmet demand for architectural novelty, some portion of the architectural profession must rise to the challenge of designing affordable and attractive models for this portion of the market. By necessity, the successful practice must also mitigate the two prevailing encumbrances on architectural progress in the arena of middle-class residential design – access and risk. As to the former, architectural practices must act more like developers by collectivizing buying power in the hands of multiple like-minded clients. The economies
of scale therein will allow individual home owners to partner with their future neighbors to build the types of communities they find most appealing. As to the second challenge, the inherent risk in re-selling a non-standard housing type, there seem to be at least two solutions: better connect eventual sellers to like-minded buyers or reduce the risk by changing the fixative property of houses to begin with. That is, make houses more like cars – demountable, mobile goods. While improved efficiency in information exchanges seems to be working to better connect buyers and sellers, the architectural profession might also make use of principles from marketing and brand management to add long-lasting market assurance to its products.
“Architecture is a business. It is produced under economic conditions very similar to the ones governing much of mass culture, and in this too differs from other forms of culture... the architect cannot be engaged in the practice of architecture without inserting himself into a given economy and technology and trying to embrace the logic he finds there, even if he would like to contest it.”


“For better or worse, America has always approached community building as a business. Developers and builders have proved proficient at providing the kind of housing that people want, at prices most of them can afford.”

- Witold Rybczynski in *Last Harvest* (2007)

The end of the architect.

As the preceding quotes articulate, both architecture and community building are businesses. Moreover, it seems readily apparent that architects are in the business of community building. The AIA, for instance, cites its commitment to designing sustainable communities in most of its literature. Why, then, does it appear that the American architectural profession has largely taken a backseat in the market for single-family residences? Barry LePatner, in his book *Broken Buildings, Busted Budgets*, estimates that less than 2% of the new houses built annually can be attributed to the profession. Michael Malone, author of *The Architect’s Guide to Residential Design*, seemingly disagrees, asserting that:

“many architects are employed by the merchant builder housing industry, either directly in their companies or with firms that provide design services to them. Architects do indeed design a great deal of the housing stock in the nation, although we neither admit it nor acknowledge it.”

According to Malone, architects working in the design departments of the nation’s major home building development firms were responsible for the designs of some 1,930,000 houses built in the United States in 2006 alone. So, which is it? Are architects designing single-family residences for the US market, or not? Malone, for his part, credits his fellow architects with effectively delivering on Le Corbusier’s dream of the “Machine for Living.” Perhaps the explanation for the disconnect between the perception that architects don’t design houses and reality is that most US Houses don’t look particularly Corbusian.

Aesthetics aside, the larger question is whether or not the architectural profession is delivering value to residential buyers and if the profession has the capacity and pathway to meet the unmet needs of the market. One must look no further than the incalculable pages of unbuilt projects to see that the capacity is there. The pathway is another story.

It’s an old trope at this point to harp on the profession’s lack of construction competence. LePatner, for his part, takes his swing at the profession summarily by concluding that “today, architects play a shadow of their former role (as master builders).” LePatner’s particular axe to grind with the architectural profession is that

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89 Ibid., 4.
PART III: ARCHITECTURE IS A BUSINESS

in (the architects) absence during the construction process, building owners have gotten well and truly lost.”

This argument is all well and good, provided that the architectural industry once played a role in safeguarding its clients from the ceaseless onslaught of change orders that LePatner finds particularly offensive. Yet again, it seems that the present perspective on past precedent is rosier than it probably should be. Buildings have become more complex and the building climate more litigious. If anything, the profession has responded in kind through increasing specialization and accordant fragmentation. Simply put, the demands of the market have exceeded the capacity of the individual. While individual architects might still possess the intellectual know-how to oversee a project from front-to-back, then the real constraint is more likely the pace of completion.

Instead of bemoaning the decline of the mythical “master builder,” the more productive question to ask is why aren’t all buildings the product of a unified design team? Architect Moshe Safdie, whose Expo ’67 at the Montreal World’s Fair directly addressed the challenges of manufactured housing, has pondered:

“One automobile assembly line where each step along the line is undertaken by a different company with its own financial interest and separate labor union!... Present [construction] practice is impossible. The client asks an architect to design something specifically for him. In making drawings the architect will specify various components out of catalogues. He is nearly always restricted to elements that are already manufactured. Then the contractor, who has usually had nothing to do with the design process, examines the drawings and makes his bid. Industry supplies raw materials and components and has little contact with the contractor. The various building material manufacturers make their components totally independent of each other... It is an absurd industry.”

The building industry is one of the last remaining strongholds for mom-and-pop shops, which LePatner attributes to risk aversion and information-hoarding. In this environment, consolidation is no-doubt looming, as better-coordinated entities will eventually overtake the outmoded stalwarts. The architectural profession, too, will be the target for contraction, and owner-operated architecture firms will likely struggle to compete. Maybe that’s not such a bad thing. As firms collapse and more-efficient, vertically integrated companies emerge, the absurdity of the construction industry will wane. And, while the autonomous architecture profession might become a casualty, its sacrifice will come at the service of better-coordinated design delivery. So-called design-build firms are taking the first steps toward this inevitable conclusion.

The rise of the experience economy.

Congruent with the consolidation of the construction industry, the rise of the so-called experience economy portends a fundamental shift in the offerings that all firms (architecture included) deliver to the market. In their seminal work, The Experience Economy, B. Joseph Pine II and James H. Gilmore propose that “in a world saturated with largely undifferentiated goods and services the greatest opportunity for value creation resides in staging experiences.” Using a range of examples spanning from the sumptuousness of a cup of Starbucks coffee to the spectacle of Disneyland, the authors make the argument that a new sector of the economy has emerged: the experience sector. As such, companies – really anyone who formerly considered themselves a member of the service sector – are advised to consider the fact that their competitors are beginning to distinguish themselves by offering customers memorable events staged in an inherently personal way. These experiences “occur within any individual who has been engaged on an emotional, physical, intellectual, or even spiritual level.” Consumers are willing to pay more for this level of engagement; a cup of Starbucks serves as the example par
excellence. Conversely, when companies fail to meet consumer expectations and consumers are thereby forced to settle for the best available offering, a customer sacrifice gap remains – a remnant of unfulfilled desire which could be captured as incremental value for the company that begins catering to the individual instead of the average.

At the high-end of the market, architects deliver custom homes to their clients, working to stage meaningful life experiences and eliminate customer sacrifice. In the middle-income portion of the market, though, sacrifice persists. While some builders have added a degree of customization to their products and augmented their offerings with brick-and-mortar outlets to round out the purchasing experience, the options are still somewhat limited to finishes and slight plan modifications. KB Home is an illustrative example. Both virtually and later in person, the prospective home buyer can select a KB Home in a particular development based on their buying criteria, typically price range and room count. Through KB’s “Built to Order” interface, the customer can interact with the plan online, placing furniture, adding or subtracting rooms, and specifying electric receptacles. While the options are somewhat limited, and the spatial configurations are relatively fixed, the home buyer is given a virtual experience intended to mimic the process of interacting with an architect.96

As technology improves and our digital space begins to truly augment our perception of physical reality, opportunities are emerging for architects to engage with potential clients in new and exciting ways. BluHomes is at the vanguard of this movement in the residential sector. Through their web platform, the company has created a streamlined process that walks prospective buyers through a five-step sequence which begins at home financing and ends with home delivery. The front end of this process – financing and land acquisition – still falls outside of the company’s purview. But, BluHomes has recognized that these steps are crucial pinch-points within the value chain and has responded with tools to assist the prospective home-buyer. Even before the prospective home buyer must consider the practicalities of securing a loan and the accordant land for construction, the BluHomes website provides customers with the ability to select from a menu of home styles and customize fit, finish, and layout in a virtual environment. Moving one step beyond KB Homes, BluHomes employs a 3-dimensional rendering engine through its online platform that allows customers to virtually walk through the homes they craft in real time.97 In this way, BluHomes has developed a unique user experience that provides entertainment value to the customer even before making a purchasing decision. In addition, BluHomes has found a way to multiply the architectural experience by removing the necessity of one-on-one interaction in the early stages of the home purchasing process; interested customers can now be vetted online instead of in the office, which reduces the potential for wasted effort on behalf of the architect. In the near future, with the increasing demand for instant feedback and the growing public perception that space can easily be generated virtually in real time, successful residential practices must employ a similar methodology if they intend to extend value beyond the “custom home” segment of the market.

The importance of customer segmentation.

The housing market has largely been typified by segmentation according to strictly demographic profiles. However, according to Roger Best, author of Market-Based Management, “market segmentation does not start with how old target customers are, where they live, if they like sports, or how many children they have. It starts with the benefits customers are seeking in solving a particular customer problem.”98 Architects, developers, and contractors have historically followed a now-antiquated line of reasoning when it comes to servicing their customers. True, where a home is built, how old its residents, and the general preferences for its future occupants must all be taken into account in the home-building process. But, when it comes to new customer acquisition, successful firms have to consider how to differentiate themselves from their competitors. One way to do so is to think creatively about the nature of the offering. Homes are typically marketed by size,

98 Roger J. Best, Market-Based Management (Upper Saddle River: Pearson Prentice Hall, 2009), 139.
type, location, and price. These are all standard factors on which any number of firms can compete. Roger Best would instead challenge firms to think in terms of customers’ needs, and thereby create distinct points of differentiation. Accordingly, an alternative line of reasoning to the traditional path might consider customer lifestyles and structure both positioning strategies and marketing communications accordingly. In the housing market, market-based management might yield distinct typologies crafted toward occupant lifestyles rather than optimized for general re-sale. An architecture firm might, for example, carve out a unique niche by creating spatial compositions with highly socially dual-income households in mind. Provided the demand is high enough, that market alone might sustain the firm indefinitely. Rather than casting a wide net, the firm so-considered might seek to distinguish itself as a leader in this particular segment of the market.

According to Best, there are three primary forces that shape consumers: demographic influences, lifestyle influences, and usage behaviors. These forces, in turn, can be combined ad nauseum to yield an untold number of market segments. To counter the potentially limitless creep of what Best calls the “demographic trap” – the compound effect of multiplying market differentiators against each other to generate hyper-specific combinations – additional measures must be taken. The most obvious ways to reduce the number of market segments to consider are segment attractiveness, profitability, and reach and the presence of well-positioned competitors that might be difficult to dislodge. Even in the face of strong competition, though, the firm that best meets its customers’ needs has the best chance to win. As such, a firm might enter a hotly contested space with a disruptive technology and quickly render the competition obsolete. The Netflix ouster of Blockbuster is a representative example from a different industry. Once segments that present an opportunity for the firm are identified, the firm can employ the right strategy for the market in question.99 As it pertains to single-family residences, the industry has catered to the median for far too long. Market-based segmentation is a lever that a sophisticated firm can pull to begin separating itself from the pack.

American housing has grown stale and the market offers little opportunity for surprise. Steve Jobs, founder and former CEO of Apple Computers, lived by the philosophy that “people don’t know what you want until you show it to them.”100 It’s a highly divisive position that seems best matched for the tech industry and flies in the rational face of market segmentation. Transporting Jobs’ reasoning to industries like housing that seem stuck in place, however, has the potential to unlock transformative results. As architects are often considered visionaries for what the future might hold, the challenge in housing is now (as it has been for some time) how to translate disruptive visions into marketable products. The solution lies somewhere between the Jobs doctrine and the market segmentation approach professed by Roger Best.

The promise of mass customization.

Market segmentation suggests that architectural products must be tailored to fit the specific needs of a group of like-minded customers. This necessity dovetails nicely with the emerging practicality of mass customization. According to B. Joseph Pine II, author of *Mass Customization: The New Frontier in Business Competition* and previously mentioned for co-authoring *The Experience Economy*, “(businesses) have found their way to a new paradigm by creating variety and customization through flexibility and quick responsiveness. This is the controlling force of the new paradigm, Mass Customization.”101 One has to look no further than Motorola’s recent mobile phone campaign or the product development approach deployed by NikeiD to see aspects of mass customization in practice. This approach to the market, previously constricted under the principles of mass production, enables the delivery of “affordable goods and services with enough variety and customization that nearly everyone finds exactly what they want.”102

102 Ibid., 44.
The importance of process design distinguishes mass customization from mass production. In fact, according to Pine,

“in this new system processes are more important than products… In Mass Production, products are developed first and then the processes to manufacture them are created, each process coupled to each product. In Mass Customization, the processes are generally created first and remain decoupled from the ever-changing flow of products.”

Interestingly enough, since the architectural profession has always customized its products to the necessities of site, client, program, etc. the nature of the business has always forced architects to consider each of their products as exercises in customization. Indeed, the “each building is a prototype” philosophy is well-worn jargon at this point. Against that necessity, the architectural profession developed a design methodology – a process – that could yield disparate outputs given different inputs. In that way, architecture has been a testing ground for the process-based approach mandated by mass customization for centuries. However, unlike adjacent industries that operate on a similar scale (the automobile, shipbuilding, and airplane industries being the most representative), the architecture profession has not taken advantage of automated production in any meaningful way. Instead, architects continue to rely on contract labor and the building industry remains highly fragmented. A simple question might better illustrate the historical distinction between architecture and the automobile industry: How many car designers can you name? One? Two, maybe? While other large-scale industries have eliminated the ego in the service of the product, architecture remains stubbornly ego-centric.

Architects Stephen Kieran and James Timberlake, authors of Refabricating Architecture believe that “(Mass Customization) proposes new processes to build using automated production, but with the ability to differentiate each artifact from those that are fabricated before and after… (in a way) that has eluded our predecessors.”

For their part, Kieran and Timberlake champion a design and production methodology that is both non-linear and non-hierarchical. The architect, in this model, is more process engineer than design visionary. Kieran and Timberlake relegate blustery debates concerning “the role of the architect” to a singular conclusion – that the market demands more, better, faster, and cheaper, and that adjacent industries have delivered. In their mind, “the market) is demanding similar progress in architecture. We can no longer claim exclusion on the basis of attachment to the ground and customized design and construction. The claim of exclusion risks irrelevance for architects.”

The architects see a way to unify art and commodity in architecture by applying a model that makes use of the advances made in the shipbuilding, aircraft, and automobile industries. That is, the breaking down of the problem into digestible parts which are then fabricated and assembled in a manner dictated by two forces: gravity and economy. No longer should houses be assembled piecemeal at the job site. We know that is a wasteful use of resources and labor. Neither should the same architectural problem be resolved over and over again by different agencies. We know that is a wasteful expenditure of intellectual energy. Indeed:

“Rather than attempt to force all problem-solving to proceed from the top down or to undergo review only from the bottom up, new management theories suggest that large-scale problems can be most effectively solved by being taken apart and solved as smaller problems, each of which demands distinct responsibilities and authorities. The results are then patched together, and considerable attention is given to the seams conjoining the several solutions.”

With respect to housing, the architects contend that “nearly all efforts of the twentieth-century architects to commodify architecture have been accompanied by an idiosyncratic agenda about appearance.” In addition since fabrication has been largely pushed outside of the realm of the profession, architects have become catalogue managers, specializing in specific details for specific products. That mode of operation will not hold in the twenty-first century. Kieran and Timberlake contend that “in this century, we desire choice, expression,
individuality, and the ability to change our minds at the last minute."¹⁰⁸ Twentieth-century clamoring about the role of architect cannot keep up with the demands of the twenty-first century market.

The only option ahead is to embrace the market and move forward. Pine details the characteristics of what he terms “the Dynamic Extended Enterprise.” It seems that firms best-positioned for success in a market of customization are not stand-alone entities but are rather components of a broader community structure. These firms succeed through flexibility plus specialization, permanent innovation, access to skilled workers, and the prevalence of a community structure.¹⁰⁹ For meaningful architectural innovation to take hold in the residential building industry, not only must the market demand change – that is a given – but architects must also adopt a different mode of practice in order to yield meaningful, resonant residential solutions.

The necessity of branding.

For most, the notion of branding conjures images of icons and advertisements – thinly stretched canvases of artistic intent over the inadequately concealed frame of salesmanship. As illustrated above, however, the economy today is about more than products and messaging. More too than simple services and sales pitches. The rise of the experience economy portends a shift in our understanding of brands as inactive or at best one-dimensional messages to emotionally engaging ideals intended to reinforce the connections people make as they interact with the world. Increasingly, brands are designed to enhance all of the senses, not just the visual, and to elicit an emotional response from people.¹¹⁰ In the realm of architecture, brands have made little headway beyond mere name recognition. And yet, branding is a device that holds promise not only for creating value by enhancing the customer experience, but also for maintaining value as buildings pass from user to user. In residential design, meaningful branding must accompany the introduction of any transformative change, if no other reason than to succinctly communicate the arrival of something new and different. Architect Anna Klingmann has broadly considered the role of branding and marketing with respect to the architectural profession in her book Brandscapes. She connects the dots from mass customization to the experience economy to branding:

“As we have moved from a one-size-fits-all economy to a customization-for-all economy, the focus of architecture has evolved from an emphasis on “what it has” and “what it does” to “what you feel” and “who you are” – the key concepts in what is increasingly referred to as the experience economy... the brand has become a symbol for contemporary consumer values associated with the information age: differentiation, customization, communication, and perception.”¹¹¹

In branding, Klingmann recognizes the potential to evaluate architecture beyond the formal merits of the object, and more holistically consider its true market currency, its ability to “create affirmative spaces that prompt memories, discoveries, and desires.”¹¹² In this way, architecture is one step removed from branding, and might even more rightly be considered an arrow in branding’s quiver. The architecture profession has an aversion to considering architecture on purely commercial terms, but, says Klingmann, “limiting architecture to a formal exercise denies its vital role in the construction of economies.”¹¹³ In fact recognizing buildings as assets that structure economies implies that architecture plays a much more valuable role in society than trivial discourse about the nature of form or finish could conceivably suggest. In order to capture that value, Klingmann asserts that:

“the principles of branding, when applied to architecture, entail the expansion of architecture’s potential as a

¹¹² Ibid., 3.
¹¹³ Ibid., 7.
strategic tool in today's competitive marketplace. Unlike a lot of contemporary architecture that is still driven by notions of fetishized abstraction and critical distance from the user brands bridge the psychological gap between product and client, forming an interactive consumer experience.”

For too long, architects have disregarded the existing residential paradigm with disdain. As the market shifts and the nature of the residence changes, prospective home buyers are beginning to define their identity through the architectural fabric of the home. The time is ripe for architects to once again consider the nature of the housing market – no longer with a formal eye or through the lens of systematized solutions, but through the vision of the client. Formalism comes across as the misguided flailing of a profession desperate for attention. True client engagement and communication through contemporary business channels vis a vis branding hold promise for architects who desire to craft meaningful spatial experiences for their clients in the twenty-first century.

The dawn of the integrated architect.

Progressive architectural practices have already begun to change the way they think about the nature of their work. SHoP architects has found a path forward through the clamor of the information age by combining computer-driven design, rational pragmatism, and customer-oriented business acumen. Gregg Pasquarelli of SHoP Architects on the founding of his practice: “The five of us began having these conversations about what the hell this profession was. There were no models that interested us. We didn't want to be the darling avant-gardists, the corporate firm, the starving artists, the academics.”

Instead of allowing their practice to be categorized neatly according to the prevailing architectural clichés, SHoP’s interests extend beyond conversations of building, construction, craft, and space to customer experience, branding, market, and profitability. From the company’s website: “Great architecture demands that design, finance, and technology work together - we're combining these forces in innovative ways to create a new model for the profession.”

A new model is exactly what the profession needs. Joel Turkel, of Turkel Design agrees:

“Real development for the industry will come from young (professionals) who are able to... think in terms of complete front-to-back business models. They are aware of the needs and limits of manufacturing processes but also are versed in new technologies, entrepreneurial methods, how capital works, strategic partnerships, and the importance of marketing and branding. This group will not design buildings but rather solutions for distributed delivery methods.”

In the end, the point is not that architecture must submit to the will of the market – the looming overstock of used McMansions illustrate that this is not a sustainable position in the long run. Rather, architects must better engage with the desires of the market and have a hand in steering the ship from the platform of professional experience. The architect must integrate herself into the value chain, rather than stand off to the side and sneer at the lack of progress being made. High-mindedness and the modernist pursuit of universality are dead. Should architects continue to uphold its ideals, they, too, will fall.

115 Christopher Hawthorne, “SHoP Talk,” *Metropolis* (New York), May 2001
116 http://www.shoparc.com/office/about
117 “Taking Care of Business.” *Dwell The Prefab Issue: Real Homes for Real People* (February 2009): 105.
By adopting a market-oriented approach to residential design, the architecture profession can expand the scope of its services, gain additional exposure, and deliver customized housing solutions to a segment of the American market who’s needs are currently unmet by the prevailing housing paradigm.

Project proposal.

This project intends to tackle the challenge of mass-oriented housing for a twenty-first century market. The preceding examination has illustrated the architecture profession's history of failing to develop market-oriented housing solutions in the wake of the industrial revolution. Rather than follow a similar path - and subsequently propose a holistically considered housing product - the author embraces the fragmented nature of the housing market. With potential solutions as diverse as the needs of the clients that must be met, the ideal of the universal housing solution is a fallacy. In its place, the profession must introduce a completely foreign model - an incomplete product. In reality, while all home owners are distinct, the variety of houses on the market today can be reduced to a denominator that encapsulates the bare necessities common to all contemporary American houses. By confining the design challenge to the most basic unit and providing tolerance for change, the project yields a housing model that is both affordable and customizable in the present and adaptable in the future. Testing the model against the variety of constraints offered by physical reality, the multi-faceted demands of a non-uniform client base, and the long-run instability of time will yield the necessary criteria to determine whether or not the project successfully meets the stated objective.

Client identification.

While home ownership remains a stable element of the American Dream, the portraits of American residents are continuously in flux. At a macro level, shifts in the preferences of successive generations along with population growth have mandated the continuous production of new houses, either out of necessity or desire. Given the fact that these houses are being built across the U.S. in markets from Maine to Southern California, there is no way to develop a generic client profile without neglecting the opportunities presented by both personality and place. In fact, the prevailing marketing logic encourages businesses to consider the nuances present within segments of markets. As such, any business model for mass-production housing is automatically hamstrung by the demands of individuals who desire non-standard solutions to meet uniquely perceived desires. A better model does not begin with the product (in this case, the architecture), but rather with the needs of the client. Like-minded clients share similar preferences. The successful business balances tolerances between clients with the demands of standardization in production to yield profitable products.

As designing for the entire American market is beyond the reach of one individual, the author has chosen to focus on white-collar Millenials in the Cincinnati, OH market who might be interested in working with an architect to co-design a house for urban infill. Broadly considered, Millenials are more apt to live in urban environments, are attracted by the DIY-ethos, and desire genuine environments which allow them to connect with their surroundings both physically and digitally. While the sleek, clean minimalism used to package technology is appealing, Millenials consistently pair contemporary products with patinaed or vintage design elements that they perceive to possess an air of authenticity. From a trend standpoint, these preferences explain the resurgence in mid-century modern styles which combine technology with the construction constraints presented by the machines of the period.
PART IV: PIECE BY PIECE - THE PROJECT
On Cincinnati, Mark Twain is said to have quipped, “When the end of the world comes, I want to be in Cincinnati - it is always ten years behind the times.” While the quote is most likely apocryphal, the insight needn’t be. Cincinnati, which has struggled for years to encourage young professionals to return to the blighted first-ring suburbs and downtown core, has recently seen a resurgence in both. Riding the wave of similar trends in Brooklyn, Oakland, Wicker Park, and the like, a segment of young Cincinnatians has eagerly taken up residence in Over-the-Rhine, the city’s (in)famous urban neighborhood. Should the momentum continue, it is not a stretch to imagine similar communities occupying satellite sites radiating from the city center along major transportation corridors. The author has identified one-such location, which will be introduced shortly. In taking up residence in these blighted communities, Millenials will have to confront the sometimes conflicting demands for privacy and community stewardship. The architecture of these communities, which must simultaneously consider the existing urban fabric, must follow suit.

Process.

The integrated architect does not consider herself as a hub connecting otherwise autonomous spokes in the architectural delivery process. Rather, if the architect is to truly integrate and deliver value for the client across multiple points within the home building experience, she must act simultaneously as both guide and filter. The architect as filter operates as an intermediary between specialists, selectively transmitting pertinent information to the client, who has neither the bandwidth, nor the expertise to manage the project herself. That said, prospective home owners certainly place value on some aspects of the design process. To that end, the architect must act as a sort of guide, giving the client a glimpse into the world of design without overwhelming them with the minutiae contained therein. The former role follows from the more traditional notion of architect as project manager, while the latter recognizes that an architect’s value extends beyond the drawings and specifications to include the architectural design experience.

Program.

Due to the potential for room-proliferation - bedroom, bathroom, kitchen, den, study, etc. - presented by the prevailing housing model, a different approach to developing basic program requirements is necessary. Universally considered, American houses provide a number of distinct zones dedicated to different programmatic ends. The disposition of these zones, whether open or closed-off, their relationship to each other, and the subsequent fit and finish must be tailored to the demands of each client. From an elemental standpoint, though, the most basic spaces in the American house are defined by the following terms:

1. **Rest** - spaces for removing oneself from all but the most private of interactions
2. **Rejuvenate** - spaces for relieving and cleaning oneself
3. **Operate** - spaces for completing thought-intensive tasks away from distractions
4. **Consume** - spaces for preparing and ingesting food and media
5. **Connect** - spaces for interacting with the outside world

Using this terminology as a point of departure, the project explores the technical requirements and spatial profiles of these programmatic zones. By developing skeletal systems along these lines, the architecture of these spaces can simultaneously support the basic nature of these uniform human requirements while allowing for the flexibility necessary to meet different users’ needs.
Site.

Situated 2.5 miles - a 7 minute drive - from the center of downtown Cincinnati, the site is positioned alongside McMillan Ave and Gibert Ave, east-west and north-south corridors, respectively. At the intersection of these two thoroughfares, a number of historic buildings sit awaiting rehabilitation. Known as Peebles Corner - for a now-extinct department store, the district is anchored by the vacant Paramount Theater. Multiple attempts to revitalize the area have been proposed. The most recent plan, introduced in 2009, provides for the acquisition and strategic demolition of 10-15 buildings in the area in order to selectively reinforce the historic character of the area. Making use of funds targeted for streetscape improvements, the plan hinges on the development of a public-private partnership to invest in the area. Similar proposals have been successfully negotiated in other parts of the city.

The proposed site is envisioned as a residential complement to this district, composed of single-family residences slated for ownership. Comprised of two blocks to the south of McMillan Ave and two large lots facing McMillan to the north, the site has a variety of street and corner conditions. Along McMillan, the buildings must address the constant churn of automobile traffic passing by. Further south, Wayne and Morgan Streets extend into the residential fabric of the adjoining neighborhoods. The site also contains two alleys - Lindsay and London - which serve as vehicular access to the rear of the existing buildings.

While the majority of the site is currently vacant, there are a few existing buildings of note. The plan includes maintaining these buildings and responding accordingly. Accounting for those buildings which will be maintained, approximately 68 lots can be drawn using the conventional 24’ x 100’ subdivision prevalent in the surrounding neighborhoods. While such a division would yield the maximum number of stand-alone buildings on the site, adjacent blocks demonstrate that in many instances, combining lots is preferred by owners that can afford to do so. Additionally, maximum build-out excludes any provisions for community spaces, which might encourage young families to move into the area. The development must also balance the reality of parking demands by the client with the communal nature of the developed streetscape. The proposed subdivision includes provisions for all of the considerations above.

Success Factors.

A model for residential architecture in the new Millenium is not dependent on stylistic novelty or progressive form-generation. Rather, successful architects in the 21st Century must generate custom houses that resonate with the needs and expectations of 21st C. clients. These people, the Millenials, demand products that bear an aura of authenticity and can, yet, be modified to suit individual tastes. Given that, any architectural proposal for the next generation housing market must include provisions that allow for both flexibility in the short term and adaptability in the long-term. With regards to the former - flexibility - the architectural product must stop short of completion in the traditional sense and allow clients to determine fit and finish, once their programmatic and technological demands are met. In that regard, the architecture in the traditional sense is analagous to the structure of a blank canvas, on which the client and architect collaborate on the final painting. In order to balance the demand for real-time input in the manufacture of the final product, and the necessities of off-site manufacturing to ensure cost-competitiveness, the project must draw a line between fixed components and flexible components and develop an architectural solution that provides for mutability.

To that end, another analogy is perhaps illustrative. The architecture can be considered as an individual expression of a particular species. Like an organism, there are certain elements of the body that are rigid, and others that are flexible. Similarly, as but one outcome in a genetic set, the architecture is constructed of aspects that are standard to the species which might be expressed dissimilarly in each individual model within a
tolerance range. Expanding upon this analogy, the architectural product might be considered as follows:

1. **Species** - Type. Rowhouse, Townhouse, Single-family detached, or suburban house. The type as a species acts as an intermediary between site and context and acknowledges the history of housing development.

2. **Skeleton** - Structure. Composed of a standard material across the species in a standard format. Dimensional tolerances allow for variances in length and width. These variances and the skeletal expression mirror programmatic requirements, which might be considered musculature.

3. **Organs** - Systems. Life-sustaining elements that are pre-determined by the species classification. Material elasticity allows for variances to match the skeleton.

4. **Circulation System** - Plumbing, Air handling, and Electricity. Linear modes of communication amongst the organs that must navigate the body within the constraints defined by the skeleton.

5. **Skin** - Envelope. Means of encasing the body to protect the interior components from exterior threats. Flexible enough to meet the tolerances of the skeleton and organs. Variable finish as determined by genetic coding.

6. **Clothing** - Decor / Style. Non-essential methods of expressing personality to convey the distinct nature of each individual organism.

7. **Accessories** - Furniture / Possessions. Individual modifications to the body which might either be ornamental, such as a ring, or functional, such as a watch. The former might be analogous to interior decor, while the latter might be more utilitarian in nature, such as a computer.

If, then, as Richards says, “the house as a home... should fit as an overcoat,” each house should be tailored to the individual expression of each client, while simultaneously conforming to the standard requirements of the house. As every coat has a similar form with different material and technological detailing to match the preferences of every coat owner, so, too, must the house adapt to the demands of each home owner. From the outset, the latter elements of the analogy, from skin forward to accessories, seem most amenable to meeting those demands. However, true customization might allow for substantial alterations to the skeleton, the transplantation of an organ, or even a mutation of the very species itself. By designing the house from the most critical elements out, the project allows for modifications to the peripheral elements (the limbs), without damaging the core elements (the spinal system).

With respect to the second success factor, adaptability, the author acknowledges that houses have a life that extends beyond the initial demands of the owner and a second life that extends beyond that point as well. The strategy described above, designing a core and allowing for alterations to the periphery might allow houses to be inexpensively modified to reflect lifestyle changes that confront its owners or longer-term shifts in the stylistic preferences of the broader culture. These changes, might be accommodated in a similar manner to those detailed above. By altering the satellite elements making timely modifications to the skin, the house might meet the demands of the market over a longer time horizon.

**Endurance.**

Ultimately, the enduring question for any architectural project must be what happens to the product once it meets its terminal state? That is, an architecture rooted in the analogy of life must also recognize the inevitability of death. Times change and while human beings will continue to inhabit houses for the foreseeable future, speculating on the demands of the future market is just that, speculation. By acknowledging that all people share similar, stable demands for housing, the project must prioritize those demands as substantial over the more superficial fluctuations of fashion and taste. Designing an architectural core that is inelastic and encasing it with
recyclable structure and skin, allows the architect to extend the useful life of the house. Amputations might occur, and skin will certainly be sloughed off, but new limbs will be grafted, second skins will form, and new clothes will be donned. The house will change, will grow, will shrink, and will regenerate. It will evolve and wear new coats to reflect the tastes of its future owners. In the end, architects must acknowledge that their design is but the beginning, especially in a market where change remains an enduring and forceful constant.


