

Introduction

A SHIFTING CONTEXT

Along with Mom and apple pie, the single-family house is one of the few absolute American priorities. With discouragingly high interest rates and the exorbitant cost of new construction, families who are seeking their first home or who have outgrown their present accommodations are finding themselves caught in a financial and spatial squeeze. Cooperatives, condominiums, government-subsidized mortgages, and owner financing have provided a certain measure of stopgap accommodation. But for those who do not have these alternatives, what is the solution to finding a home that is both affordable and functionally viable?

It is my contention that rather than give up a home purchased with "cheap" money to build anew with more expensive funding, the American home owner will opt to modify and rejuvenate what is in hand. Rather than make do in a pint-sized co-op or condo or flush money down the drain of rental, those seeking a first home will find a viable alternative to new construction in the plethora of inexpensive existing homes that show enough potential to encourage investment in some thoughtful work.

The emergence of the addition as a standard solution rather than a makeshift option for the American home owner has its origins in unique demographic and aesthetic circumstances. After the two world wars, doughboys and GIs came home to sweethearts and ripe economies, creating immediate residential building booms. The automobile and cheap gas facilitated an exurban sprawl on the outskirts of every urban center in the United States. The last thirty years have seen the flight of business headquarters to the promised land of country club living, corporate campuses, and alluring tax benefits—further spreading the congestion of suburban America. Sites have dried up, property values have skyrocketed, and the houses built to turn a profit generations ago are now showing their age. Many major urban areas in America are feeling the pinch, especially Washington, D.C., the suburbs of New York, Los Angeles, Denver, the cities of the Sunbelt, as well as small-town New England.

Concurrent with these social migrations, the Arab oil embargo of 1975 forever changed America's criteria for desirable residential architecture. If a building does not address the need to conserve energy and mitigate absurd heating and cooling costs, it is judged defective. Whereas it was once an optional feature, energy efficiency is now a bottom-line criterion for the desirability of a home design. This

emphasis can be seen in the growing number of architect-designed additions with passive solar intentions, supplanting the quick fix of a prefab greenhouse or sun-space tack-on. Travel distances have become so significant in terms of fuel costs that an influx of upper-middle-class refugees from suburbia is rediscovering the joys of urban living. Otherwise known as gentrification, this migration threatens traditional neighborhoods throughout our urban centers.

Concurrent with these social and economic movements, several recent aesthetic currents have helped engender a renewed respect for existing buildings and have caused architects to reconsider the option of reworking existing structures in lieu of constructing completely new houses.

During the excess of urban-renewal demolition in the 1950s and 1960s, a core of committed citizens began the Historic Preservation movement, which has now been graduated as a fully functional in-place bureaucracy with laws and regulations set up to foster the retrieval of buildings threatened by man or nature (or both).

Perhaps the best-documented movement of recent building design has been the so-called Post-Modernist movement, whose traditional or historical motifs are caricatured in playful postures in new construction. This trendy bandwagon lends acceptance toward the homely aesthetics contemporary architecture has spent the better part of this century rejecting.

As a corollary to both the Historic Preservation and Post-Modernist movements, a renewed sensitivity by architects to a building's surrounding neighborhood has been dubbed Contextualism by those who label aesthetic intentions. Quite simply, Contextualism urges a sympathetic response to existing conditions where once architects felt compelled to heroically reject a building's context.

These three movements, implicitly or directly linked, have to a greater or lesser extent helped contemporary architects undergo the aesthetic equivalent of sensitivity training regarding the existing buildings around them.

The last decade encompassing these aesthetic evolutions has seen the availability of money, land, and energy dry up. As these shortages are combined with a huge pressurization of the market as the baby-boom babies have babies, I believe we are on the advent of a discovery that the addition can mean infinitely more than simply added space.

THE STATE OF THE ART— PERCEIVED AND EXISTING

There are literally millions upon millions of American homes no longer functionally or economically viable. The inhabitants of these buildings, American middle-class families, have been ill-served by the thoughtless agglomeration of space that has defined the typical residential addition.

The problem is a failure of imagination, and applied imagination is the architect's method of survival.

Common public perception of residential addition design is prejudiced by the way these projects have traditionally been conceived. The typically expedient addition has all the charm and appeal of an idiot cousin. In response to a functional evolution (children, new kitchen, or videocassette recorder), houses seem to spring gratuitous cancers accommodating the new activities with the subtle sensibility of a lean-to tent.

Who "designed" these growths? Often it was the builder who knew what would stand up but valued the bottom line as the arbiter of his aesthetic, or the decorator who photocopied whatever magazine article struck a fancy—structure, environment, and leaks be damned. Or perhaps it was the owners themselves who with the full building ignorance of the decorator and the stylistic incompetence of the builder sallied forth with the innocent enthusiasm of soldiers hitting a beachhead. The resulting additions are often quite sad in appearance and utility and are frequently removed within a generation or two.

Sensitive and innovative additions do exist. A small percentage of the work is done by architects in the proto-

professional stages of their careers or during times of economic recession or depression. But because of the predominant image of the typically expedient addition, the field of serious architectural criticism has shied away from this body of work.

Unfortunately, if the architect is to become a viable choice to answer the needs of the average home owner, he must deal with a negative public perception. He must fight the twin myths of the Howard Roarkian ego that sweeps aside the needs of a client, and the architect-designed project as an open financial floodgate of unrestrained cost. This can be done by the exposure of the thoughtful work that is going on today. The examples shown in this book hopefully display a sensitivity and responsiveness that do not compromise creativity. Success in design is not merely the cheap thrill of a heroic statement. Without a depth of understanding of an existing building's properties and a client's needs, the addition can be a sorry joke.

The bulk of the homes in America turn a deaf ear toward their owners and deserve only a passing paean to the ingenuity of capitalism in pumping out just enough amenity to facilitate a healthy profit. The average home-desiring family is stuck in the "something is better than nothing" consciousness of mass production affordability—unless creativity is given a free hand. Since the home is the last best hope of our egos and our wallets, I cannot believe that we will settle for the standard when the exceptional is shown to be possible. America has the largest blank canvas of buildings in the world and a huge market desiring the space, economies, and visceral thrill so starkly absent from these boxes. There are architects creating, out of necessity, a mountain of work out of many little molehills.

These photos represent a walk down memory lane. We have all seen an undesigned addition or perhaps been actively involved in the process of building one. Although planned and carefully considered by the home owner, the generic addition does not have many ambitions beyond simple spatial expansion in a convenient manner.

This montage is not intended to mock or point a finger in anger. The projects shown are archetypes of what has been the norm for residential additions in America. Usually laid out by the owners or builders without training in or awareness of the rules implicit in the existing buildings, these projects are rarely ugly but seldom beautiful, with their impact to the interested observer usually ranging from slightly awkward to cheerfully ad hoc.

Each of these projects is a bit of living history for the family involved and represents a level of success and confidence that allows for the laying on of hands.



Photos by Sue Ann Miller

THE DIFFERENCES WITH ADDITIONS

In order to better understand and evaluate the examples in this book, it is a good idea to address the specialized methods and criteria used to effect the solutions shown. Despite the best efforts of morphological analysis and academic methodology, the design process remains an ambiguous, highly personal phenomenon.

However, unless the complexities inherent in deriving a transformative addition solution are outlined, the examples shown lose their full meaning. It is not enough to apprehend the physical content of the addition, for in its own unique way the addition best manifests the dynamic interface between the family and the home that both nurtures the growth and reflects the character of its occupants.

In designing a new home, the architect proposes (with seductive presentations and visionary musings) and the client disposes (with his checkbook). In the addition project, it is often the client who proposes, since years of occupancy can create a familiarity with the existing building that no architect could hope to have. In response, the architect must take the specific truths of his client's knowledge and infuse his scheme with a utility only guessed at in new construction design. It is the twin bases of the family and the existing building that mesh with an architect's vision to create a result both inspirationally new and reassuringly rooted in the original building. Such rich results come only with an intense analysis of the existing conditions and the family's needs. Given the aforementioned depth of programmatic input and the importance of an architect's familiarity with existing construction techniques plus his ability to effect his desires in new construction, an addition project tests an architect's talent and training more than the standard new building project. The very acts of cataloging and depicting an existing building, involving site inspection and field measurement, can be quite intimidating to most architects.

Architects are seemingly called upon to have X-ray vision to see existing utility systems, structural decay, or existing

load-bearing capacity within a sealed building envelope. Understandably, an architect's instincts and experience can often prove frustratingly inadequate. The liabilities are often great. This is why many builders as well as architects have shied away from undertaking addition work. However, because of the enormous needs described earlier and the depressed state of the design profession, more and more architects are willing to take on the risks and express themselves via the addition.

In an addition project, an architect must synthesize the intricacies of both the programmatic input of the clients and the condition of the existing structure as evidenced in the building. To help the reader better understand the complex basis upon which an addition design is undertaken, it is appropriate to outline those areas that must be addressed by the architect. The following checklist is not intended to be complete, rather it can serve as a fundamental listing of those issues that make an addition a unique design problem.

I Codes and regulations

- A. Read all applicable zoning ordinances and check the following:
 - 1) Setback requirements.
 - 2) Height limitations.
 - 3) Existing type of zoning in place for the site.
 - 4) The procedure for variance or special-exception application. Bear in mind all probable time needed for such procedures during the preliminary design and scheduling of the project.
- B. Determine whether the site is in a Historic District, wetlands-management and coastal floodplain area, or any other location subject to extraordinary regulations.
- C. If the building is not up to code minimums and the violations, while not affecting life safety, would bankrupt the project budget, speak to the building inspector or consult the local code to determine exactly what percentage of capital improvement



(30 to 40 percent of the building's assessed value, typically) constitutes a major renovation in the eyes of the code, causing the entire structure to be liable for a complete review of code compliance by the local building inspector. This can be disastrous to the owner's capability to afford the addition.

II Inspection of the existing building and integration of the addition

A. Foundation

- 1) Check for water damage present and past.
- 2) Determine what new subsoil drainage must be added.
- 3) Determine whether existing settlement indicates an unfortunate subsoil condition invisible from the outside.
- 4) In designing the new addition, make sure to do the following adequately:
 - a) Regrade earth around the addition's perimeter to drain water away from the building.
 - b) Overlap new and old waterproofing membranes.
 - c) Integrate new foundations with old to prevent uneven settling.

B. Structural conditions

- 1) Determine the existing framing structure.
 - a) Carefully sketch the plan while on site.
 - b) Inspect the basement and attic.
 - c) If all else fails, assume the short-span-is-best theory; that is, in oblong rooms the longer set of parallel walls are load-bearing.
- 2) Inspect for deformation by looking for the following:
 - a) Surface cracks on finish surfaces.
 - b) Moldings popped away from existing position.
 - c) Door and window frames that are out of square; notice whether the trim miters are tight or coming apart.
 - d) Excessive vibration when you jump up and down.
- 3) Determine if the deformation is recent by finding out the last time the evidence above was repaired. If the home is out of square but there is no recent movement, then the structure has probably stabilized, allowing for a safe addition.

C. Mechanical systems

- 1) Locate plumbing stacks and utility chases via basement and attic inspection.
- 2) Determine the existing state of heating-plant and insulation efficiency. If there are inadequacies, the addition can and should rectify the problems as much as possible.
- 3) Unless absolutely necessary do not move the following:
 - a) Utility chases.
 - b) Plumbing stacks.
 - c) Water and utility lines.
 - d) Septic systems.

- 4) Always consult a professional contractor or engineer about the adequacy of various systems' capacities and indicate their recommendations in the bidding and construction documents.

D. Exterior membrane

- 1) Inspect for leaks.
- 2) Determine if flashing or ventilation is adequate to prevent rot.
- 3) Avoid exterior concave corners when adding on.
- 4) In the design of the addition, extend existing planes where possible (roof, wall, etc.). Do not try to weave surfaces older than five or ten years with new material; resurface where continuity is desired.
- 5) Reuse existing openings where possible.

III Interior indications of existing occupant needs

A. Use patterns

- 1) Inadequate spaces tend to have the following:
 - a) Too many functions occurring within them.
 - b) Essential furnishings only, few amenities.
 - c) Signs of heavy use, i.e., wear, dirt, etc.
- 2) Underutilized spaces have the following:
 - a) Dust and lint versus tracked-in dirt or handprints on walls.
 - b) Furniture legs furrowed into carpets, indicating long-term static positioning.
- 3) Since it is always cheaper to alter internally rather than add externally, combine inadequate and underutilized spaces wherever possible.

B. Circulation

- 1) Determine existing circulation patterns.
 - a) Walk the various sequences of the house.
 - b) Sketch the plan carefully while on the site.
 - c) Look for carpet wear and wall soiling.
 - d) Determine which exterior doors are used the most.
- 2) Do not move stairs unless absolutely necessary; consider the existing stairs as the end-points of a desirable circulation pattern.
- 3) If necessary, do not hesitate to revise existing patterns to do the following:
 - a) Clarify entry vista.
 - b) Minimize space occupied by the circulation path.
 - c) Minimize changes in direction.

The gist of this is quite simple: Be thorough in the evaluation of the existing conditions and be cautious about the assumptions you make.

The architect must strive to *reduce* the area of the new part of the building to be added on. If that can be accomplished by rerouting circulation for maximum efficiency or by combining underutilized spaces with inadequate spaces, large amounts of money can be saved or reallocated for the amenities and features that can enrich even the most brilliant solution.

Thoroughness and caution at the outset of the project can facilitate seemingly effortless and eloquent solutions to complex problems.

BEDROOMS AND BATHS

When children numerically or physically outgrow present accommodations or when parents financially outgrow the need for spatial and spiritual limitations, additions can ease the squeeze.

INTRODUCTION

There is a neat division when it comes to describing bedrooms in the American home. There is the Master Bedroom and there are all the others—for children, guests, or relatives—in subdominant postures.

Very often the "starter home" can become *the* home for a family. Moving destroys friendships children have spent young lives building, and the costs of larger homes are prohibitive, especially with college a menacing specter to financially stretched parents. Obviously homes for 2½ people cannot adequately house 4 or 5 without expansion.

The need to accommodate children and relatives is a direct spatial need brought on by increased numbers of people. The master bedroom addition is only effected in the case of the home owner reaching a state of success where money is available to provide expression of formerly repressed desires.

The needs of the two bedroom types are different and yet related; privacy and personal scale are cru-

cial, but whereas the master bedroom is elegant, the child's bedroom best be durable. Similarly, whereas the master bath has become the vehicle for luxurious self-indulgence, the priority for the children's bath is cleanability.

The beds in master bedrooms are altars to love and are often the aesthetic fulcrum of the space; children's beds are a necessity in a room never big enough to avoid the functional and physical congestion of childhood activities. It is the master bedroom that has been infused with an unrepressed spirit in the contemporary additions in America. It is the child's bedroom that has been the subject of playful ingenuity.

Both have ceased to be simple spaces conveniently laid out above a given first-floor footprint. It can be said that an architect expresses a synthesis of spirit and form, and the variations of expression can be wonderfully realized within the simple physical accommodation of sleep.

LIVING ROOMS AND FRONT DOORS

The need for functional versatility, the requirements of connection with the great outdoors, and a rethinking of the formal entry to a house have helped revise the perception of the living room and front door.

INTRODUCTION

Typically the American formal living room is a stilted space. Often the square footage of the home has been preemptively divided into several distinct spaces creating an assemblage of living room, dining room, and den that takes limited space and creates several undersized and arbitrarily divided rooms. Such subdivisions usually create wasteful and disruptive circulation patterns. In the typical American home, the formal living room tends to be individually symmetrical, showing a static, centered approach to space.

The days of the plastic slipcover are ending. Fewer homes have pianos no one plays, fireplaces that go unlit, and carpets stretching wall to wall over hardwood floors. The living room of the 1980s must have the utility and the flexibility made impossible by the size and form of the traditional living room. A concurrent benefit of this newfound openness can be an enhanced sense of perspective upon entry to the house.

The need for connection with the outside world is a natural result of the desire for open space. Over the past thirty years, we have stopped thinking of the functional requirements of windows and doors (catching light and providing access) as mutually exclusive. The living room can best utilize the spatial liberation and functional expansion a deck can provide. Perhaps the cheapest cost-per-foot space available, the well-designed deck can be the major indoor-outdoor mediator in a home.

Often a concurrent development in a living room addition or renovation is the sun space. Obviously the siting of the existing building and the internal layout are crucial in the viable creation of a solar-gain space. Rather than being a tack-on, prefab, semi-industrial greenhouse, the sun space can be merely a glazed wall or the modern equivalent of French doors facing a terrace or deck. Additionally, the hot tub can often be in close proximity to the main living area, integrated with whatever inside-outside interface exists.

Obviously the primary function of such spaces is public accommodation during social gatherings, but since the nature of entertaining has evolved from sit-down eating and adjourning for sex-separated conversation to more ongoing eating, drinking, and talking, the location of the living room relative to the kitchen and bath has become more direct. With the new emphasis on electronic entertainment—video, stereo, etc.—the number of functional requirements has multiplied.

It is not enough to provide a large open area. An architect must use his broader perspective and training to exploit the opportunities a living room addition affords in solving problems beyond simple spatial expansion. Entry, circulation, multipurpose space planning, and spatial hierarchy should be addressed when designing the major space of the American home. The following additions evidence all of these challenges well met.