

Home Sweet Home

Preparing for growth will mean thinking differently about where we live

BY RIVES T. TAYLOR

We Americans spend a lot of our time and money making our houses “castles”—both in terms of size and advanced (and energy-consuming) technology to fill that space. The annual Houston Home and Garden Show more than demonstrates the focus we have on where we live: Over the past 40 years, for example, we have added about 50 percent more space per family member to our homes.

The American love affair with the home has evolved from colonial pattern books and Andrew Jackson Downing’s mid-18th century designs exploring the “American” house. Those pattern books, predicated on the plan, section, and elevation of the model house, were based on creating functional housing prototypes that, although imported from the Old World, were to be climatically and materially fit into a New World context. It was an unwritten understanding that while, say, the aesthetic of Georgian England was to be used in the design of the American house, dealing with such practical issues as water collection, cross ventilation, day lighting, and the use of durable local materials suitable for the vicissitudes of the climate would also be part of Anglican pragmatism.

Over the last 60 years we have ignored that pragmatism in our desire for the single-family house freestanding on a quarter-acre suburban lot. A great deal of modern North American homebuilding geography has ignored the reality of place. Vast housing estates, with their attendant population and traffic, have appeared in regions not particularly supportive of our notion of the home as an indestructible castle. This sense of longevity of “Home” has been shaken recently with three particular, and in some cases quite literal, storm clouds. We are finding that the limits of electricity and potable water are det-

rimentially impacting at least 75 percent of America’s suburban areas. An even more uncertain challenge to our house and home promises to be the increasing forces of hurricanes and other climate-related destruction, especially for those within 100 miles of the coast or in the deserts of the Southwest.

While houses may be increasingly energy efficient, our demand for more and more technology along with the sheer scale of residential construction is overtaxing the distribution grid and power system. (This is happening not just in America, but elsewhere in the world—China alone will need over 400 million new houses in the next 20 years.) The distribution grid is increasingly seen as particularly susceptible to failure. Hidden from view is the fact that the primary source of power to the average house is a coal-burning power plant, with its problematic pollution footprint. By some estimates, Texas is looking to increase its electric power consumption by 50 percent in the next 30 years, and there is concern that getting the system the energy it demands will result in more power plants that could accelerate air quality and global warming problems.

Similarly, the modern houses in huge estates demand city-purified or potable water in huge quantities, water that is often distributed by aging and leaky systems. The fastest development in North America is occurring in areas where there is barely enough water available for growth. Think Arizona, southern California, San Antonio, and even, though a bit farther away from its water challenges, Houston. Yet less than 25 percent of the water in homes really has to be potable.

Perhaps like our forebears in Houston, we could learn to collect some

of the 48 inches of annual rainfall for the remaining 75 percent of this water use.

There are, of course, steps being taken to address energy and water use of older homes through conservation. Houston Mayor Bill White has started a weatherproofing and energy optimization strategy for multiple older neighborhoods; several hundred post-World War II houses in the Pleasantville neighborhood are getting these improvements.

Affordable housing organizations, including Habitat for Humanity, are also taking a closer look at the long-term costs of ownership for their houses, and seeking ways to reduce water and electricity use. In other parts of the country, where limits on resources are more clearly recognized, developers of large-scale housing are being prodded to provide a product with real water and energy efficiency, using such tools as the DOE Energy Star protocol to substantiate their results. Such market demands are now starting to affect even Houston builders.

In the past two years the third storm cloud for the extended life of the house has emerged even more forcefully. Not only are more active weather patterns such as hurricanes and heavy rains impacting the longevity of the house, but the uncertainty of the power grid and the potential for long power outages create a stark sense of uncertainty among homeowners. In the case of Hurricane Rita, it was reportedly not the strong winds that destroyed the most houses, but rather the extended power outages, which led to the destruction from within of even slightly waterlogged residences. Unmitigated humidity can lead to the degradation of the entirety of a house’s interior. The drywall, particle-board cabinets, and carpets of Gulf Coast houses are unlikely to withstand a bout with this natural force.

Recall that earlier houses not only didn’t have these new but fragile finishes, they also didn’t rely on central air conditioning for dehumidification.

The recovery of most of the Gulf’s housing stock has been slow not only because of the well-reported problem with capital flow, but also because of the debate entailed in recovery. Do we rebuild the same old way—as in fact is encouraged by FEMA—or do homebuilders need to think both about disaster reliance (durability and ease of recovery) and decentralized water and power distribution (local generation including solar photovoltaic panels) to avoid large grid failures? A small but growing industry has sprung up for specialized house construction in which a broadened and strengthened sheltering roof and strengthened façades—the rigid shell of the home—enclose a far more energy- and water-efficient core, one fitted with far more durable materials suited for the climate. Especially when raised above the level of surge tides, these homes are noted to be disaster resilient.

Dealing with these issues are questions we face in the Houston and Galveston area as we plan to double in size. A large part of our region’s growth will come at the expense of the open, natural spaces that help handle floods, lessen heat waves and the impact of hurricanes, and also provide everyday sources of natural delight.

This growth, if south of Houston proper, also will require a rethinking of what we’ll do before and after a natural disaster. Many consider sheltering in place the only answer. One thing is certain: Our southeast Texas homes need to learn the recent lessons on the limits and stewardship of resources in the face of a clearly changing world. ■