THE DIGITAL HALL: A SEARCH FOR INTELLIGENT SPACE IN THE AMERICAN HOME

JUNE WILLIAMSON
Boston Architectural Center

INTRODUCTION

Have you ever installed a phone on your wrist?—You will.
AT&T television advertisement.

The advertisements would have us believe that our quotidian existence will be completely transformed in the near future by digital technology. It is the aim of the telecommunications and digital computing industries to have "a microchip in every appliance, giving processing power to everything from credit cards to refrigerators."[1] Digital technology continues to be domesticated, tamed from the heights of the masculine domain of the military-industrial complex. Concurrently, the boundary between domestic space and other spaces of living and working is eroding in the evolving postindustrial age.

A new space intended to house a new generation of appliances—PCs with CD-ROM drives, fax/modems, video phones—has entered the lexicon of the typical middle-class American home. These gadgets claim to permit entree into a parallel "virtual" world that may be accessed without physically leaving the bastion of the home. The infusion of new digital technology-based systems and appliances for the home market poses a challenge to architects and developers. This technology could be used to reinforce existing trends towards suburban isolation, escapism, and obsession with security. Alternatively, the technology could liberate domestic architecture from stasis and normative design by facilitating the acceptance of truly flexible plans that make no assumptions about the lifestyles and family structure of inhabitants.

CLEANING THE HOUSE

In the early part of the twentieth century, feminists and progressive home economists in the United States proffered new models of housekeeping that stressed communal or community services. They were suggesting that the single-family model was inefficient, perhaps obsolete.[2] The American manufacturing industry, searching for new markets at the end of the massive production efforts of World War II, defended the status quo by developing new household appliances. These appliances—toasters, vacuum cleaners, washing machines—purported to increase each individual housewife's efficiency, preempting the logic of cooperation and simultaneously producing new and profitable markets.

This strategy was expanded in the 1950s with support from government agencies, bankers, builders, and automobile manufacturers in a coordinated effort to promote suburban, single-family home ownership for the white middle-class as a route towards economic and political stability in the nation. Cultural institutions were not removed from this phenomenon; a cultural apparatus of architecture magazines and museums promoted an industrial aesthetic in the home in order to tap into the highly lucrative postwar housing market by actively promoting a depoliticized version of European Modernist design.[3]

In addition, the availability of new, supposedly labor-saving, household appliances as consumer goods addressed the decline in affordability of domestic servants. Housekeeping was falsely presented as leisured consumption rather than uncompensated labor. As a result of the widespread consumption of these appliances and the dispersal of white, middle-class families to the burgeoning suburbs, wives were encouraged to stay at home within the static confines of the domestic sphere and out of the recognized workforce. Ironically, studies have shown that the time housewives spent at housework actually increased as a result of these lifestyle changes.[4]

Young ex-GIs were encouraged to become bread winning husbands and fathers with substantial daily commutes; this was the age of the Organization Man. The fifties lifestyle of conformity, orderliness, and routine spurred the drive towards transformation of two particularly appliance-rich regions in the American home: the kitchen and the bathroom. The transformation had begun decades earlier, with the introduction of hard, shiny utilitarian materials for easy cleaning and new plans that emphasized built-in storage and continuous work surfaces.

This phenomenon may be observed from another angle, borrowing a page from Freud, to suggest that the economic consumption embodied by the transformation of kitchens and baths reflected an obsession with bodily consumption. This view permits a reading of these rooms—the loci of eating, bathing, and excreting—as the true center of the house, supplanting the hearth (or heart) that is the living room.[5] The centrality that these spaces had attained by mid-century is signified by the design attention and dollars spent on lavish built-ins and status symbol appliances. Ironically, these elements meant to convey luxurious ease often required significant maintenance.

THE DIGITAL HALL

Against this backdrop, I wish to suggest that the center is not holding. Another shift is occurring, facilitated by the quest of capitalism for new markets and the concurrent development of a cultural obsession with extra-bodily or virtual consumption. A new space has been introduced into the typical American home, a space which I will call the Digital Hall. It is a threshold

into the disembodied world called cyberspace where data, sensations, and events are primarily filtered through the organs of the head. As such, it constitutes a major challenge to the domestic centrality of the body-focused kitchen and bath. I wish to pause here to point out the multiplying dualities: body, femininity, stasis, home-boundedness versus mind, masculinity, dynamism, exploration. The notion of the Digital Hall suggests a cross-fertilization of these domains.

Ostensibly, the Digital Hall will house a new generation of household appliances and automated systems utilizing digital technology. These products and services may be classed into two groups: services focused on the regulation and protection of the internal home environment, and products that provide dynamic, interactive connections to the external world from within this now protected environment. The externally connected products could function to keep entire families at home by permitting the decentralization of commerce, work, and school. In addition, digital environments may further reduce bodily mobility by supplementing face-to-face socialization with VL or virtual life relationships (as opposed to RL or real life).[6]

The first iterations of the Digital Hall confine new appliances—PCs, fax/modems, entertainment centers—to a single room, which may be the former den, study, or a spare bedroom. The gray and beige plastic boxes sit awkwardly on tables or against walls, difficult to integrate with traditionally conceived domestic furnishings. I recently encountered a student project in which intense effort had been extended towards designing a complex system of built-in shelves and desks for an apartment. In the scale model of the project, against one wall was a large black box. This was the "entertainment center." One may draw an analogy between the black box and the house itself; they are both containers. Having made this observation, one may conceive of building the infrastructure for digital technology directly into the structure of a house.

EDUCATING THE HOUSE

One trend that is being actively pursued in home construction is the Smart House concept. The Home Builders National Research Center, in alliance with the manufacturing and utilities industries, developed the copywritten concept in 1984 and have promoted it with model homes and at trade shows and conventions. The Smart House is a conventionally constructed suburban house with additional remote-controlled built-in wiring and microchips that provide comprehensive home security, enhanced access to electronic entertainment services, and efficiency modulation of energy use. In effect, the Smart House system creates a localized network, a nervous system, connecting the various differentiated regions of the house. The ability to program the dishwasher to begin a cycle in the middle of the night when demand is low on the local power grid is an example of its advantages. I would locate the appeal of the Smart House in the attempt to infuse dynamism into the static matter of a domestic structure.

In an expansion of this concept, developers are teaming up with telecommunications and computing corporations to provide community-wide "fiber-to-the-curb" services. The Disney Corporation, for an extreme example, has partnered with Honeywell, General Electric, and AT&T in the development of the new town of Celebration, Florida. The promotional literature lauds Disney's strategic alliances with AT&T, who will provide networking for on-line services, General Electric, who will furnish conventional appliances, and Honeywell, who will offer Smart House automation and security systems technology. The residents of the town will test-market new digital technology-based services from these corporations. Feedback from this and other similar projects will shape the services that will soon be offered nationwide and later, worldwide.

On the outside, however, the houses in Celebration will present a pre-modern image; residents may choose from six styles all meant to refer to an earlier, presumably simpler, America. But meanwhile, the interiors of these houses will have "ample living space with open floor plans that meet the needs of modern families."[7] In other words, from the inside these houses are the same designs as those currently built all over the country. These typical house plans are in fact quite inflexible, unless the inhabitants conform to the nuclear family model, as all seem to do in the brochures. Disney claims a dual purpose: to encompass both "the ease of earlier days and the vision of the future."[8] This is a far cry from the EPCOT (Experimental Prototype Community of Tomorrow) Center, Disney's last experiment in corporate sponsored social engineering. EPCOT ended up as yet another theme park. A vastly different strategy of futurology is being pursued in Celebration where the Jetsons are keeping up with the Joneses.

But both the Smart House and such "cyberdevelopments" as Celebration are trapped in a dilemma. They depend upon exterior conventionality for market acceptance, and yet are limited by the constraints of home builders' conventional construction methods and the use of stock plans. Once the hard wiring is installed and the walls are sheetrocked, it is not easily accessed for upgrades; the system becomes inflexible.

THE HOUSE IS THE HALL

The Smart House is intriguing in the ways it plays to postindustrial obsessions with comfort, security, and access to information. It leads one to wonder what might be the results of extending the parameters of the Smart House concept to deliberately explore the effect of these obsessions on the space of domesticity. Some insight may be gained by exploring three projects that attempt to visualize the fully-digitized home. One suggests a flexible, systematic approach, another is self-aggrandizing, and the third exposes the escapist drive behind the creation of digitized home environments, but also suggests a model for addressing the problem.

As part of the House Rules exhibition at the Wexner Center, Ellen Lupton and Jane Murphy presented a Case Study House subtitled Comfort and Convenience.[9] They observe that "the technologies of convenience typically are designed to comply with a rigid grammar of modularity and cannot be adjusted to meet the needs of the individual user." They note that, as in the Smart House, such technologies of comfort and convenience are tactically rather than strategically organized and are worked around conventional floor plans and construction methods. Instead, they strategically propose a flexible modular house with a raised access floor, an interior partitioning system, and numerous compact storage units. All the components could be factory-built and installed in numerous combinations; the uses of various spaces are not proscribed and could also be easily

altered to suit to the inhabitants' changing needs.

This rationalized approach adopts both the logic of the kitchen-transforming progressive home economists and the logic of digital computing, with its combination of hardware and software. What remains unclear is how such a concept could be marketed. The current home building industry is industrialized at the level of material—stock lumber, windows, and other parts — but the process of speculative building conveys the impression that the homes are customized. The industrial components described by Lupton and Murphy will not easily convey the much-mythologized aura of "home."

The second example is the mega-million dollar estate that Microsoft chairman Bill Gates is building near Seattle, Washington. He writes that he "wanted a house that would accommodate sophisticated, changing technology, but in an unobtrusive way that made it clear that technology was the servant, not the master."[10] Each of the 45 rooms will be equipped with wall screens and a sound system. The house will learn the preferences of visitors and will provide visual images, sounds, and light quality catering to the tastes of each. The focus is on entertainment; he says, "If you're a guest, you'll be able to call up portraits of presidents, pictures of sunsets, airplanes, skiing in the Andes, a rare French stamp, the Beatles in 1965, or reproductions of High Renaissance paintings, on screens throughout the house."[11]

Gates clearly relishes the egocentric condition of having a decentralized system that provides music and images that will follow him and his guests about his house. The homeowner is presented with enhanced opportunity to create his or her environment as an explicit extension of the self or selves. One can easily sense the marketing potential of this model which, however, does not address issues of plan design and construction methods. With all this networked technology, why does he still need so many separate rooms? Why might anybody need more than a few separate spaces when digital technology could be used to radically transform the environment in each space depending on the activities taking place there.

The final example is Shelterskinspeed, a house designed by Paul Metalic of Studiozone for an individual described as "a reclusive brooding male," seeking to escape the conformity and anomie of suburbia.[12] In this vision, the house is transformed into a static armored vehicle sited in the middle of a middle American cornfield. It has a protective outer shell (a visual manifestation of an obsession for physical and psychic security that verges on the paranoid) and an inner skin consisting of an intricate array of built-in features. The space is open—freed up for inhabitation by "guests." The guests of the reclusive are virtual objects and figures, including scantily-clad women, classic cars, and knights in armor. They may be visualized with the aid of holographic technology, or perhaps they are simply imagined.

Metalic is exposing the issues that arise as the home becomes more than the space of domesticity. He sees suburbia as a "devoid and meaningless" dystopia. In Shelterskinspeed, the house is still a private domain, a last bastion. But it is also the setting for multiple facets of daily existence—work, living, and emotional play—as well as a threshold into the increasingly active on-line world. The plan is a open modular warehouse that with the aid of digital technology and a complex skeletal structure has a high potential for mutability. This house is shelter for a single individual. One might conceive of such a structure as the component part of a house for several individuals or a family.

BUILDING THE HOUSE

These projects suggest a return of domestic architecture to the sphere of tectonics as theorized by Karl Botticher, Gottfried Semper, and others in nineteenth century Germany.[13] Rather than conceiving of middle-class suburban housing as a pick-and-choose game from a finite world of symbolic object forms, spaces for living and now working should be conceived as constructed entities synthetically designed in response to numerous specific conditions. Houses should be constructed according to social and physical forces, as Botticher advocated, as well as according to a new force—that of digital technology. An ontological program could shape the design of new structures that have the capacity to respond to the unforseeable changes in family structure, work patterns, educational systems, modes of commerce, and entertainment venues that we face in the next millennium. It is the responsibility of architects to bring intelligent planning and guidance to the development of the inevitably ubiquitous Digital Hall.

NOTES

1. Thomas Maresca, "Trend Watch: PC Home Automation," *Consumer Information Appliance*, No. 58 (May, 1995).
2. These movements have been amply described by Dolores Hayden *The Grand Domestic Revolution*, (Cambridge, MA: The MIT Press, 1981). See also Gwendolyn Wright, *Building the Dream: A Social History of Housing in America*, (Cambridge, MA: The MIT Press, 1981).
3. A good version of this argument is provided in Mark Jarzombek, "'Good-Life Modernism' And Beyond," *The Cornell Journal of Architecture*, p.82
4. Hayden, p.26
5. See the catalog from the exhibition curated by Ellen Lupton and J. Abbott Miller, *The Bathroom, the Kitchen and the Aesthetics of Waste: a Process of Elimination*, (Cambridge, MA: MIT List Visual Arts Center, 1992).
6. These terms have been defined by psychologist Sherry Turkle. She suggests that the development of multiple identities in VL may allow people to reconcile psychological issues in ways that can positively impact their real lives. See *Life on the Screen: Identity in the Age of the Internet*, (Simon and Schuster, 1995.)
7. Marketing brochure for Celebration entitled *Celebration: An American Town*, (The Walt Disney Company, 1994).
8. "New Town Celebrates People, Nature and Technology," *Celebration Chronicle*, Volume 1, Number 1, (Summer 1995) 1
9. Ellen Lupton and Jane Murphy, "Case Study House: Comfort and Convenience," *Assemblage* 24, (August, 1994), 86-93.
10. Bill Gates, "Inside 'The House'," *Newsweek*, (November 27, 1995), 62-63
11. Gates seems to have an ulterior motive for promoting the idea of projecting digital images on the wall like framed pictures. He has been actively buying the digital image rights to painting and photography collections worldwide. He stands to collect a small royalty every single time someone downloads one of these images. The potential for profits is enormous.
12. Paul Metalic, *Shelterskinspeed: Last Bastion for the Reclusive Brooding Man*, Master of Architecture thesis (Cambridge, MA: Massachusetts Institute of Technology, 1994).
13. Mitchell Schwarzer, "Ontology and Representation in Karl Botticher's Theory of Tectonics," *JSAH*, 52 (September, 1993) 267-280