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## **MICRO-HOMES / SMALL HOMES**

### **Description:**

The growing emphasis on environmental sustainability and energy efficiency, coupled with volatile home prices and a declining economy, has spawned an expanding market for living "small." Devotees have replaced the belief that "bigger is better" with one of "less is more." Included in this movement are small, ultra-compact houses. The development of architecturally designed "small houses" became popular in Japan shortly after World War II in response to the availability of loans to build houses no larger than 50 m<sup>2</sup> (approximately 538 sq. ft.). Taking the concept of small living even further, Japan's recent "net rooms" development is booming—creating closet-sized rooms for short-term living while job-searching, providing Japan's underemployed with a place to stay and an address to put on a job application.

While still a tiny portion of the housing market, in the United States the small house and micro/tiny house movement is expanding in tandem with the increasing focus on energy efficiency, environmental sustainability, and green building. Small houses are typically smaller than 1,000 square feet, and micro houses are often smaller than 200 square feet, some as small as 85 square feet.

Architectural styles of micro/small homes vary dramatically, and plans are available from architects. Homes are both stick-built and pre-fabricated. Some micro homes are mounted on wheels and can be easily transported to various locations, while other small houses are permanently sited in any location where permitted by zoning rules; for example, the back yard of another primary home, as an addition to an existing home, on a separate lot in a residential neighborhood, in a wooded rural area, in an urban in-fill space, etc.

SUS, a Japanese factory automation equipment maker, developed cube-like frames, which can be arranged into stand-alone homes or used as attachments to existing houses (952 cubic feet, at a cost of \$17,000, and which can be assembled in one day). Yamaha is selling soundproof rooms that can fit into an existing home or added to an exterior of an existing home (1.4 meters x 1.8 meters x 2 meters high, for \$3,700. Commdesign's founder, Yasuyuki Okazaki, custom designs homes on 320 sq. ft. plots.

### **Benefits:**

- Provides an affordable option for individuals living on a small budget— minimal utility bills and maintenance costs; financial freedom from a large mortgage.
- Is an environmentally friendly alternative—a small structural and carbon footprint; fewer resources for energy and water are used.

- Encourages a low-consumption lifestyle.
- Can be mobile, easily moved from one location to another.
- Are a viable model for emergency housing: In 1995, after the earthquake in Kobe, Japan, 300 "temporary" micro row houses (288 sq. ft. each) were completed in less than 90 days. Five years later, some residents did not want to leave those homes.
- Provides good temporary housing for special populations, such as work crews, staff housing, homeless individuals, and others.
- Offers young adults an affordable first step into home ownership.
- Good alternative where suitable land is scarce.
- Have been successfully sited in urban, suburban, and rural areas.
- Easily designed to fit on odd-shaped lots (long and narrow, triangular, etc.).
- Designed modules can be fit *within* an existing home or be *attached* to an existing home.
- Can be individually sited or grouped to form a complex.

**Impediments or barriers to development or implementation:**

- For many individuals, the small size is claustrophobic. If housing several residents in a unit, the psychological stresses of close living quarters must be considered.
- There is limited space for those individuals who accumulate "stuff."
- Usefulness requires the ingenious use of space that is seen in the designs created by the current proponents of small living.
- Currently, designs do not include the universal design features necessary to accommodate the needs of individuals with frailties or physical disabilities.
- Siting may not be in compliance with local zoning or building codes.

**Resource—examples:**

- "Halving It All," *Dwell—At Home in the Modern World*—David Sarti, architect, Seattle, Washington: Sarti's 1,100 sq. ft. residence built for \$227 per sq. ft. including land. <http://www.dwell.com/articles/halving-it-all.html>.
- Peter King, Bakersfield, VT.: teaches workshops on constructing small houses. [peterking@vermonttinyhouses.com](mailto:peterking@vermonttinyhouses.com);

<http://www.smallhousestyle.com/2008/12/01/the-king-of-small-houses-tiny-houses-the-vermont-way/>.

**Resources—written and web:**

- Michael Freeman (August 7, 2004), *Space: Japanese Design Solutions*. New York, NY: Universe Publishing. A photographic exploration of Japanese architecture and design in size-constricted areas, exploring ingenious and revolutionary solutions to space-compromised living. Freeman was the photographer for *Frank Lloyd Wright Masterworks*, *American Masterworks*, *Adobe*, and *Angkor*, and is an authority on Asian design and art.
- Shay Salomon, et al. (2006), *Little House on a Small Planet: Simple Homes, Cozy Retreats, and Energy Efficient Possibilities*. Guilford, CT: Lyons Press. A guidebook, including floor plans, photographs, advice, and anecdotes.
- Peter King, Vermont: *Small House Style*, Web magazine; (802) 933-6103. King teaches hands-on workshops for constructing small houses. Web magazine includes plans, builders, books, and other resources.  
<http://www.smallhousestyle.com/2008/12/01/the-king-of-small-houses-tiny-houses-the-vermont-way/>.
- Jay Shafer, Principal, Tumbleweed Tiny House Company, PO Box 941, Sebastopol, CA, 95473. Stick-built small houses between 90 sq. ft. and 837 sq. ft.; workshops, plans, books, consultation.  
<http://www.tumbleweedhouses.com/>.
- Steven Kurutz (September 10, 2008), Online: *TimesPeople*, *The New York Times*, Home and Garden, "The Next Little Thing?" In print: (September 11, 2008), *The New York Times*, Section F, p. 1.  
<http://www.nytimes.com/2008/09/11/garden/11tiny.html?ex=1378872000&en=10f7c60b8ec81580&ei=5124&partner=permalink&exprod=permalink>.
- Hiroko Tashiro (March 13, 2007), "Japan: Micro-Homes in the Big City," Architecture Section, *Business Week*.  
[http://www.businessweek.com/globalbiz/content/mar2007/gb20070313\\_145902.htm](http://www.businessweek.com/globalbiz/content/mar2007/gb20070313_145902.htm).
- Tiny House Blog: <http://tinyhouseblog.com/gallery/>.

**Resource (free or fee-based)—technical assistance contact names:**

- Gregory Paul Johnson  
Founder, Small House Society  
Director, Resources for Life internet site  
Life web site  
P.O. Box 2717  
Iowa City, IA 52244-2717  
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[mail@resourcesforlife.com](mailto:mail@resourcesforlife.com)  
<http://www.resourcesforlife.com>

The Small House Society supports the research, development, and use of smaller living spaces that foster sustainable living for individuals, families, and communities worldwide. Johnson also provides full time technology support through his company, Technology Services Resource Group.

- Bray Kittel, Owner  
Tiny Texas Houses  
20501 East Interstate 10  
Luling, Texas 78648  
(830) 875-2500  
Contact: <http://tinytexashouses.com/contact-us/>.  
<http://tinyhouseblog.com/category/blog>.  
Kittel built four houses in 2007 and ten in 2008, ranging in size from 70 sq. ft. to almost 800 sq. ft (\$20,000 - \$90,000).  
<http://tinytexashouses.com/>.