



**SATURN**  
RESOURCE MANAGEMENT

## Mobile Home Construction

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Today, mobile or manufactured homes are built in approximately 240 factories nationwide. They are built in long, narrow sections on steel trailers with wheels and axles. Mobile homes are designed in single or multiple sections to be hauled over roads to permanent locations.

Single-wide homes dominated the market until the 1980s, but now double-wides are more popular. Most single-wides are manufactured to widths of 14 or 16 feet. (Older single-wides are 10-to-14 feet wide). Using sections 12-to-16 feet wide, double-wide and triple-wide homes reach total widths of 24-to-48 feet and look very much like site-built homes. Standard lengths for mobile home sections range from 40-to-80 feet.

Mobile or manufactured homes are single-story, wood-framed homes with wood floor joists, wall studs, and roof trusses. The wood framing in

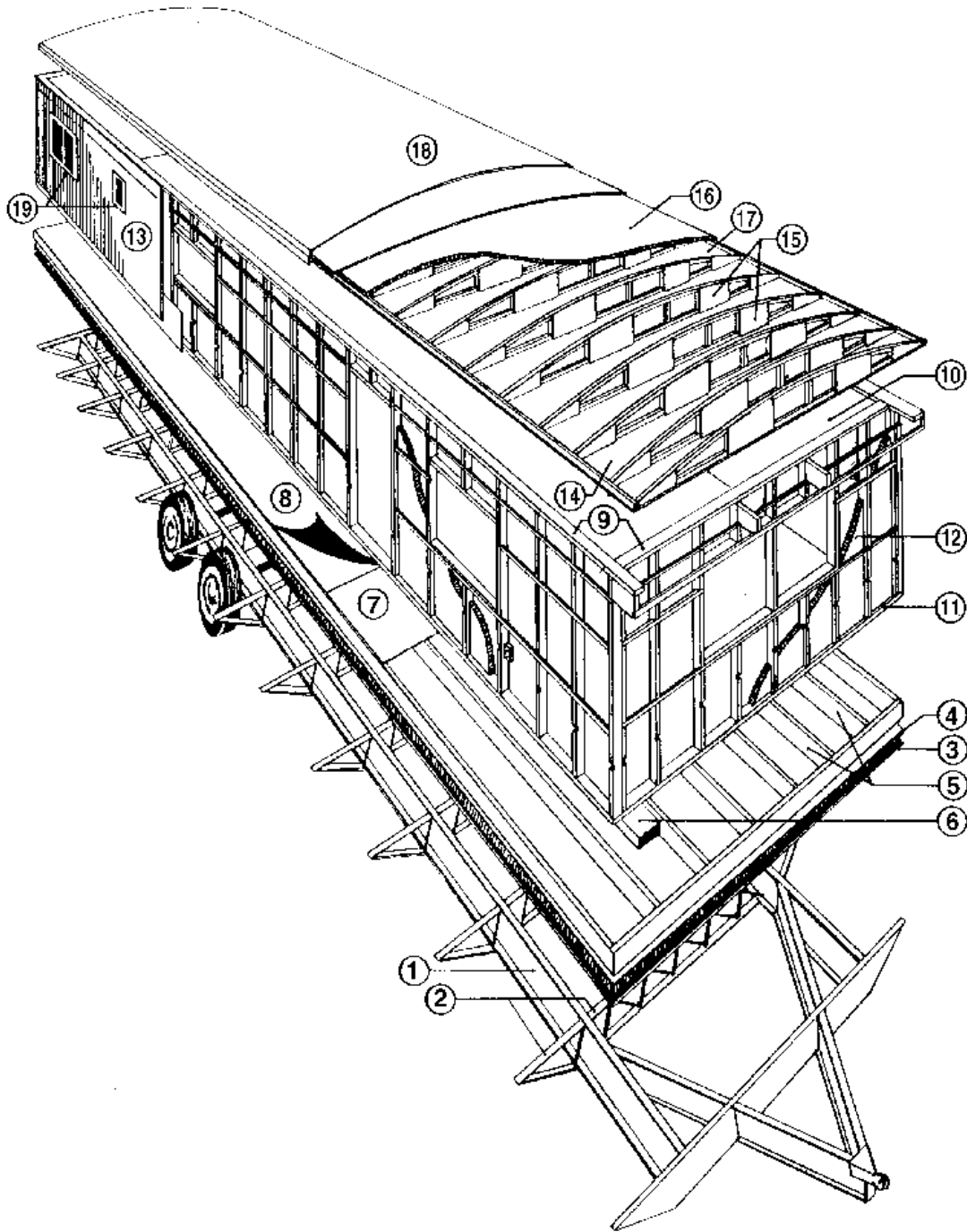
roofs and floors is lighter than that of site-built homes because manufactured homes are engineered to save lumber and to be lightweight for easier transport. Transportation considerations also dictate their long narrow shape and low roof height—each section usually being less than 16 feet wide and 12-to-13 feet high.

Mobile home manufacturing differs from site-built house construction. Mobile homes employ a number of unique features and construction practices to cut costs and to produce a portable home. The following is a brief list of ways a mobile home differs from a site-built home:

1. Its wooden frame is bolted to a steel chassis that remains with the home throughout its service life.
2. It is constructed in long and narrow segments with shallow roof cavities to limit the home's height measured from the road, for clearance under bridges.
3. Its roofs, walls, and floors are assembled in large pre-built segments on a factory assembly line.
4. Its floors and exterior walls may only have one layer of sheeting, not two like many site-built homes.
5. It utilizes single framing, rather than double framing, around door and window openings.
6. Its interior wall paneling provides structural rigidity for keeping metal-sided mobile-home walls rectangular.
7. It incorporates sealed-combustion furnaces that get their combustion air from outdoors. These furnaces, an industry standard since the early 1970s, are safer than furnaces used in site-built homes.

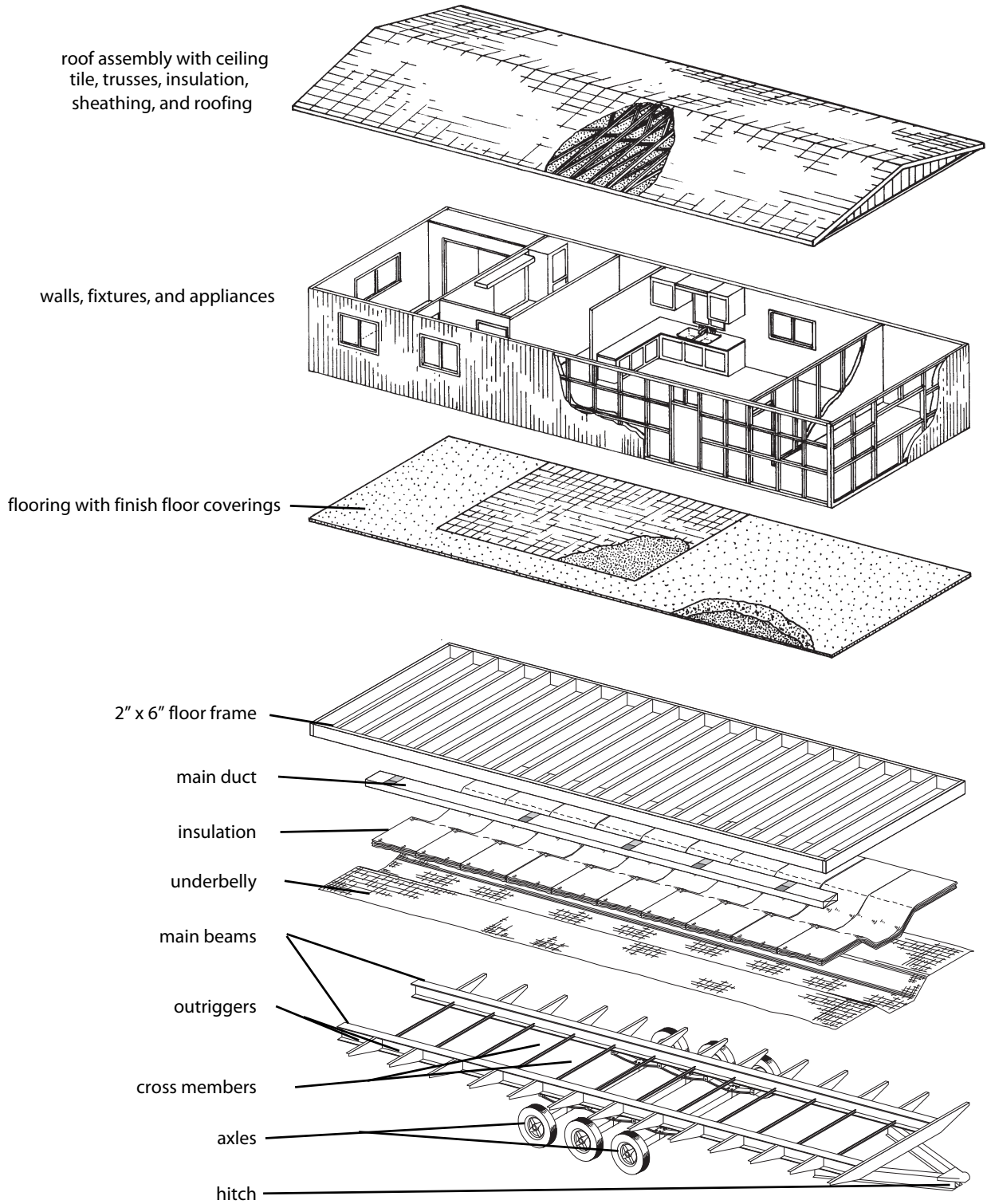
The above differences do not necessarily make a manufactured home better or worse than a site-built home.

Figure 1-5 Typical Components of a Mobile Home



1. Steel chassis; 2. Steel outriggers and cross members; 3. Underbelly; 4. Fiberglass insulation; 5. Floor joists; 6. Heating/air conditioning duct; 7. Decking; 8. Floor covering; 9. Top plate; 10. Interior paneling; 11. Bottom plate; 12. Fiberglass insulation; 13. Metal siding; 14. Ceiling board; 15. Bowstring trusses; 16. Fiberglass insulation; 17. Vapor barrier; 18. Galvanized steel one-piece roof; and 19. Metal windows.

Figure 1-6 Mobile Home Assembly



The chassis, floor, walls, and roof are assembled separately, then moved by cranes, and fastened together on the assembly line.

### ***Mobile Home Manufacturing***

Understanding the ways that mobile homes are built will aid in repairing, maintaining, and weatherizing them.

Different parts of the home, such as the floors, walls, and roof, are built separately and then assembled on the production line. The first part of the home to be built is the welded steel chassis. The standard chassis consists of two steel I-beams with cross members and outriggers welded to them. The hitch assembly and axle assemblies are usually bolted to the I-beams, rather than welded, so they can be removed when the home is set up at the site.

The floor assembly is constructed separately. Water lines, waste lines, ducts, insulation, and underbelly are all attached to the floor before the floor assembly is bolted to the chassis. Particle-board flooring, carpet, and linoleum are installed before any interior walls are erected.

The furnace, bathtubs, and interior walls are installed before the exterior walls are attached to the floor. Both interior and exterior walls are pre-assembled on tables, with interior paneling or drywall attached to the framing before the wall assembly is placed on the floor.

The roof assembly—the ceiling attached to the roof frame—is built separately in another part of the factory, placed on top of the walls, and then fastened in place. Roofing and siding are installed after the roof and wall cavities are wired and insulated. After the exterior siding is attached, the windows and doors are installed. Finally, the interior trim work is completed and the home is prepared for transport.

Study the construction drawings in this book. Note that interior walls usually rest on carpet or linoleum and that the ceiling tile extends over the wall's top plate. This is useful information, in case repairs or energy improvements involve changes to these areas.

## **Mobile Homes: Affordable Housing**

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Nearly 19 million people or 7.5% of the U. S. population occupy 9 million mobile homes. Most customers appreciate the low payments and relatively quick outright home ownership that manufactured housing provides them. Currently, about one-in-three new homes is a manufactured home.

Mobile homes comprise about 6% of all the single family households in the United States. In many rural areas they comprise more than 50% of all single-family housing. Of approximately nine million mobile homes in service today, four million were built in the 1960s and 1970s; five million were built in the 1980s and 1990s.

Mobile homes are a very affordable housing resource. Used mobile homes can be bought for as little as \$1000, although buyers are encouraged to be cautious. Older units may require extensive repair and weatherization to bring them up to modern standards of comfort and energy efficiency. Still, the low purchase price allows buyers to invest in necessary repairs, weatherization, foundation construction, and home installation.

New mobile homes are also a housing bargain. The average new manufactured home costs about \$35,000 versus about \$120,000 for a new site-built home. They feature many of the same comfortable features as site-built homes with far less financial investment.