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PREFabricATED BUILDING CONSTRUCTION
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ABSTRACT OF THE DISCLOSURE

Prefabricated building construction including a prefabricated utility core which contains the entire power supply for a building. The core is completely prefabricated and contains the heating unit, electrical system, air-conditioning unit, and all the necessary plumbing for the building. The core may be prefabricated on a mass production basis or may be custom-built to suit individual tastes. Alternatively, several basic core constructions may be available which may then be mass produced. The core is transported to the building site and mounted on a foundation. Thereafter, the rest of the building can be rapidly built around the core. The base of the core provides girding support for the remainder of the building. The usual core will include one or more bathrooms, laundry room, utility room, kitchen, and breakfast room. All of the detail work on the enumerated rooms will be completed prior to the shipment of the core to the building site.

The present invention relates to a prefabricated building construction and more particularly to a prefabricated building construction which utilizes a prefabricated utility core which includes the necessary heating, air-conditioning, electrical and plumbing supplies for the entire building.

In the past, it has been suggested to prefabricate buildings. More specifically, it has been suggested to prefabricate a room of a building, such as a bathroom and to install such prefabricated room at a building site. This is generally accomplished by first erecting the building and thereafter adding the prefabricated bathroom to the building. While this has resulted in some saving as to the overall cost of the building, the saving has not been substantial.

It is an object of the present invention to provide a prefabricated building construction which substantially reduces the total cost of the building.

It is another object of the present invention to provide a prefabricated building construction which utilizes a utility core which includes the electrical system, air-conditioning unit, heating unit and plumbing for the entire building.

It is a further object of the present invention to provide a prefabricated building construction which permits mass production on an assembly line basis of the most expensive and complex portion of the building.

It is yet another object of the present invention to provide a method of constructing a building which includes prefabricating a utility core, shipping the core to a building site, and construction of the building around the core.

It is a still further object of the present invention to provide a prefabricated building construction which utilizes a method wherein a core is first placed in position on a footing and the remainder of the house built therearound.

It is still another object of the present invention to provide a prefabricated building construction which permits the construction of high quality housing at a substantial savings in cost.

Other objects will appear hereinafter.

The above and other objects are accomplished by means of the present invention. A utility core is provided and includes the entire power supply for the building. The utility core may contain a heating unit, electrical connections sufficient to supply the entire building, air-conditioning unit and all the plumbing for the building. In most instances, the core will include one or more bathrooms, a laundry room, a utility room including a heater, air-conditioner, and hot water heater, a breakfast room and a kitchen. The core will be prefabricated on a mass production basis and will be shipped to the building site. The foundation will be prepared and the utility core will be mounted on the foundation.

Everything within the utility core will be complete. Hence, it will be unnecessary to do any further plumbing, cabinet work, etc., with respect to the core. Thereafter, the remainder of the building can be rapidly built. The small trades jobs are substantially eliminated, hence saving a substantial amount of time and money and in both the construction of the building.

The core is bought on a wood flooring which is in turn clamped to a chassis. The chassis is preferably made of steel and is adapted to have a hitch and wheels supported by an axle removably secured thereto. When the core is placed in its desired position on the foundation, the hitch and wheels and axle are removed and the chassis forms the main girding for the building.

It is possible to have several alternative types of cores available. Furthermore, it is possible to permit various changes to permit customizing of the basic cores. Substantially, the entire production of the core can be placed on a mass production system with a computerized system used to indicate the various modifications of the basic core.

It is possible to utilize the core in a building which has a basement or alternatively has no basement. The foundation will provide a support for the core and hence it is immaterial whether a basement is provided in the building. It is possible to utilize the utility core in single unit dwellings and multiple unit dwellings. By use of the prefabricated building construction of the present invention, houses can have customized extensions without the usual expense attendant to the production of custom-built houses.

For the purpose of illustrating the invention there is shown in the drawings a form which is presently preferred; it is being understood, however, that this invention is not limited to the precise arrangements and instrumentalities shown.

FIGURE 1 is a perspective view of a utility core having a hitch, and wheels and axle secured thereto and constructed in accordance with the principles of the present invention;

FIGURE 2 is a partial exploded view of the utility core of FIGURE 1;

FIGURE 3 is a sectional view taken along line 3—3 of FIGURE 1;

FIGURE 4 is an enlarged partial sectional view showing the details of the interconnection of the axle to the
chassis and flooring of the prefabricated utility core; and FIGURE 5 is a plan view of a house constructed in accordance with the principles of the present invention and utilizing a utility core.

Referring now to the drawings in detail wherein like numerals above like elements throughout the several views, there is disclosed in FIGURE 1 a utility core generally indicated by the reference numeral 10.

The utility core 10 is provided with side walls 12 and 14 and end walls 16 and 18. The side walls and end walls may be bearing walls and, in any event, are of substantial construction. A plurality of partitions is provided for dividing the core 10 into various distinct rooms. The number of partitions utilized will, of course, depend upon the exact type of core design desired.

The core 10 is prefabricated and thereafter transported to the building site. The core 10 is provided with a floor 28. The floor 28 is supported by a sub-frame 29 having a plurality of joists 30. The sub-frame 29 may be made of wood and is secured to I-beams 32 and 34. The I-beams 32 and 34 form part of a chassis 36. The chassis 36 may be made of high strength steel and may be provided with a plurality of cross-support members 38 which extend between the I-beams 32 and 34.

The support members 38 are generally spaced equidistantly throughout the length of the chassis 36 as shown in FIGURE 2. However, three of the support members are designated 38' and are closer together in order to provide additional support adjacent one end of the chassis 36. An axle 40 is adapted to be removably attached to the chassis 36 by a suspension device. The axle 40 has a sleeve 42 on opposite ends thereof. Each sleeve 42 is secured to the axle 40 by any suitable conventional means. Each sleeve 42 has a leaf-spring 44 secured thereto. Each leaf-spring 44 may be integral with its respective sleeve 42 or may be connected to it in any suitable conventional manner. Each leaf-spring 44 is removably secured to two of the supports 38'. As shown in FIGURE 4, the leaf-springs 44 may be secured to the supports 38' by means of bolts 46 or the like.

Tires 48 are adapted to be mounted on the axle 40. A hitch 50 is adapted to be removably secured to one end of the chassis 36. The hitch 50 is adapted to be connected to a tractor or other vehicle so that the core 10 can be transported from the site where it is prefabricated to the building site. The support members 38' provide additional support adjacent the point 40 for the core 10 as it is transported to the building site.

The core 10 is completely finished prior to shipment to the construction site. The core 10 is provided with a heating unit, air-conditioning unit, if desired, plumbing and electrical system suitable to supply the entire building. One end of the core 10 may be provided with an opening at the base thereof to permit entry of main water lines, gas lines, electrical lines, etc., to be supplied to the core 10.

Removable slats 52 may be utilized to cover various openings adjacent the base of the core 10. After removal of slats 52, electrical wiring may be drawn through some of the openings to supply electricity to the other rooms in the building. Likewise, some slats 52 may cover duct work 53 which is to be interconnected with duct work 55 which will be installed in the remaining rooms of the building. The ducts in the core 10 will extend from the heating unit 82 therein to the side walls 12 and 14 so that heat may be supplied to the remaining rooms of the building.

Foundation members 54 and 56 are provided at the building site. The foundation members 54 and 56 may be below or above ground level. Also, the building may be provided with or without a basement, as desired. The foundation will be the only portion of the building constructed when the core 10 is delivered to the construction site. The chassis 36 with the core 10 thereon will be wheeled into position so that the I-beams 32 and 34 will be immediately above the foundation members 54 and 56.

Suitable jacks (not shown) may be employed to support the core 10 above the foundation members 54 and 56 while the hitch 50 and the axle 40 are removed from the core 10. Thereafter, the core 10 may be lowered onto pipes 58 and accurately positioned on the foundation members 54 and 56. Thereafter, the core 10 will be raised slightly and the pipes 58 removed from the foundation members 54 and 56. The core 10 will then be lowered onto the foundation members 54 and 56 and will be securely locked in place.

The rest of the building may then be constructed after the core 10 has been properly positioned on the foundation members 54 and 56. The remaining foundation will have been so constructed to permit the floor of the remaining portion of the building to be level with the floor 28 of the core 10 where a ranch type home is desired. Ducts 57, forming a part of the duct work 53, will run to the duct openings at the base of the core 10 to permit heating of the remaining rooms in the building. Electric wires coupled to a circuit breaker supply housing will be drawn through other openings in the base of the core 10 to permit electricity to be supplied to outlets throughout the entire building. No further plumbing work will be necessary.

FIGURE 5 sets forth the floor plan of a building with the core 10 of the present invention therein. The floor plan includes various rooms which may include a combination dining room and living room 60, an entrance hallway 62, and various bedrooms 64, 66 and 68. Numerous windows 70 may also be provided in the remaining structure of the building. Also, a hallway 72 may be provided adjacent the core 10 to separate the core from the various bedrooms 64, 66 and 68. As shown in FIGURE 5, the core unit 10 includes a first bathroom 73, a kitchen 74, an eating area 76, a utility room 78 and a master bathroom 80. The utility room 78 includes a heating unit 82 and a hot water heater 84 and may also include laundry fixtures 86.

The chassis or guide 36 may provide support for the floor of the entire building. Suitable plates (not shown) may be connected to the I-beams 32 and 34. Joists 88 may also be secured to such plates and the exterior foundation or footing to provide support for the floor (other than floor 28) of the building. Hence, the girder 36 provides support for not only the floor 28 but also the floor of the entire building.

The present invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof.

I claim:

1. A method of constructing a building comprising the steps of providing a foundation, prefabricating a utility core, providing the utility core with a chassis adapted to provide a main girder for the building, transporting the core to the building site, positioning the chassis on the foundation, and thereafter constructing the remainder of the building, said step of constructing the remainder of the building including structurally securing the utility core to the rest of the building so that the chassis of the utility core provides structural support for the entire building.

2. A method of constructing a building in accordance with claim 1, including the steps of affixing wheels and a hitch to the chassis, said transporting step including pulling the core through the building site and locating it over the foundation while it is on said wheels, and then removing the wheels before said positioning step.

3. A method as set forth in claim 1 including the steps of providing a heating unit for the entire building within the prefabricated core before said transporting step, and said constructing step including interconnecting ducts of the heating unit with duct work provided in the remainder of the building.

4. A building comprising a foundation, a prefabricated core fixed to and supported on a chassis, said chassis being supported by said foundation and providing a main
3,492,767

girder support for the floor of the entire building, said chassis including spaced cross members and a pair of longitudinally extending metal I-beams interconnected by said cross members, said core including a sub-frame above said chassis, a floor for said core above said sub-frame, and joists for the remainder of the building coupled to said sub-frame and adapted to support the floor of the remainder of the building in the same plane as said floor for said core.

5. A building in accordance with claim 4 wherein said core includes a kitchen separated from a bathroom and a utility room by walls.

6. A building in accordance with claim 5 including heating ducts in said core and terminating at the periphery of said core for coupling to other ducts adapted to heat the remainder of the building.

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