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Levenson

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[54] HOUSING ASSEMBLY ON A HILLSIDE

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[52] **U.S. Cl.** **52/169,** 52/79, 52/236

[51] **Int. Cl.** **E04h 1/02**

[58] **Field of Search**.....52/79, 169, 236, 18

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[57] **ABSTRACT**

There is disclosed a housing assembly for disposition on a hill. The hill is graded into terraces at approximately equally spaced elevations. Typically the height of each terrace above the terrace just below is about 9 feet and the width of each terrace is about 50 feet. Housing units are disposed along the terraces with a pedestrian passageway and an open area for a court or garden for each unit between the wall rising from the terrace to the next terrace above and the walls of the unit. Typically each unit is about 9 feet high, 40 feet long, and 32 feet wide, for lower cost the unit may be 9 by 36 by 24 feet. Each unit provides a shelter along the passageway below and has a clear view away from the hill. The units are formed of two-bedroom modules which are readily convertible into one- and three-bedroom units. The passageways for the units are approachable by a pedestrian approach perpendicular to the terraces at an angle to the horizontal convenient for pedestrian use. Parking, recreational, and service facilities are on the periphery of the assembly.

11 Claims, 6 Drawing Figures

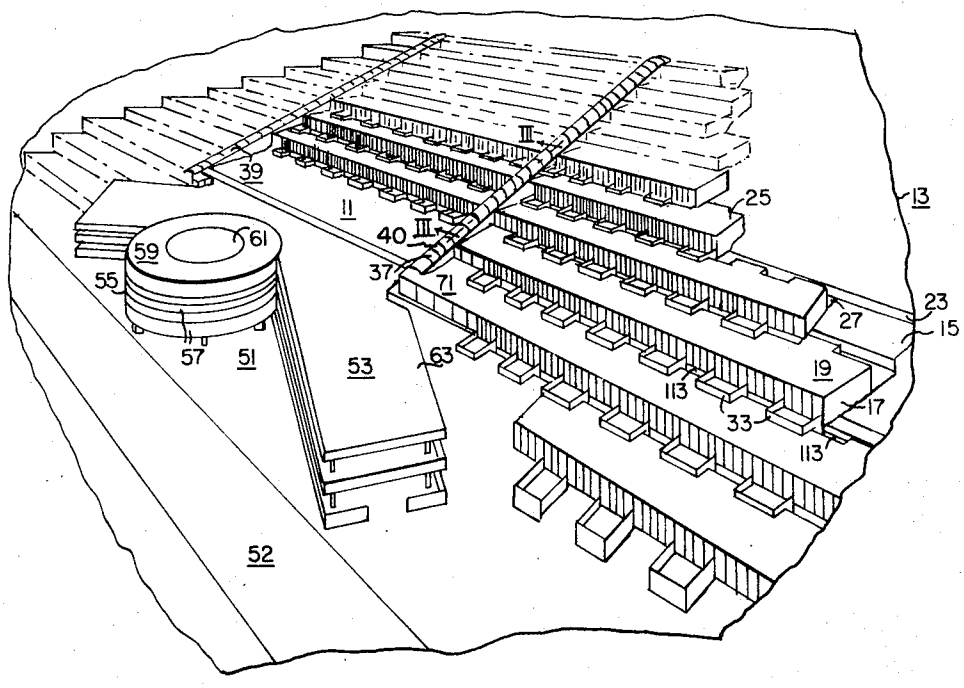


FIG.1

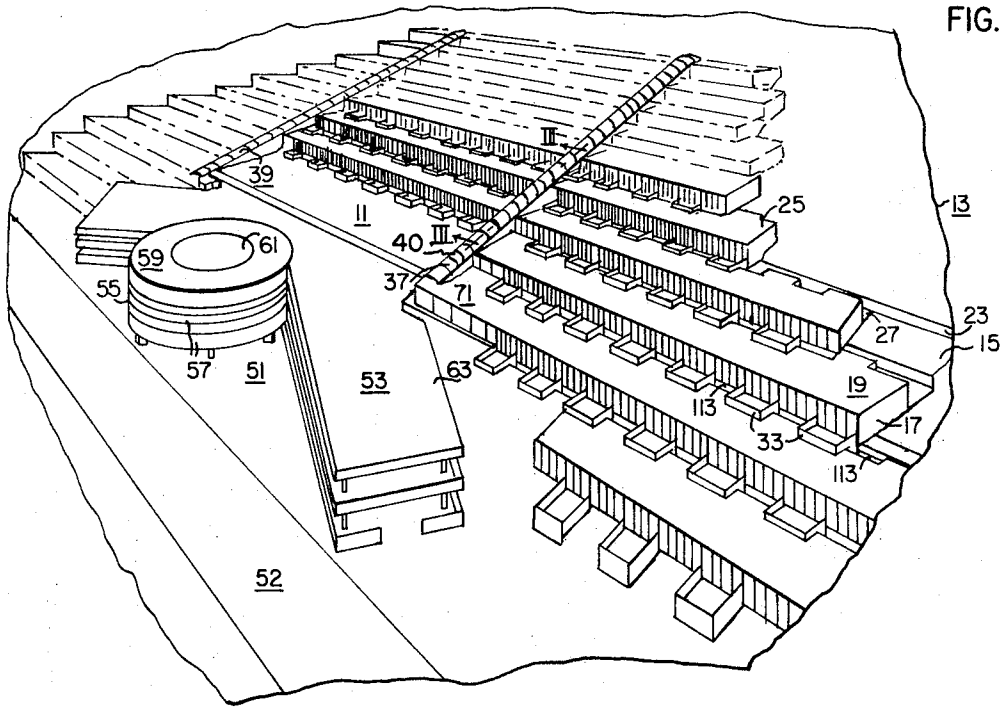

39
11
III
40
37
71
25
13
23
27
15
19
17
33
113
59
61
55
57
51
53
63
52

FIG.2

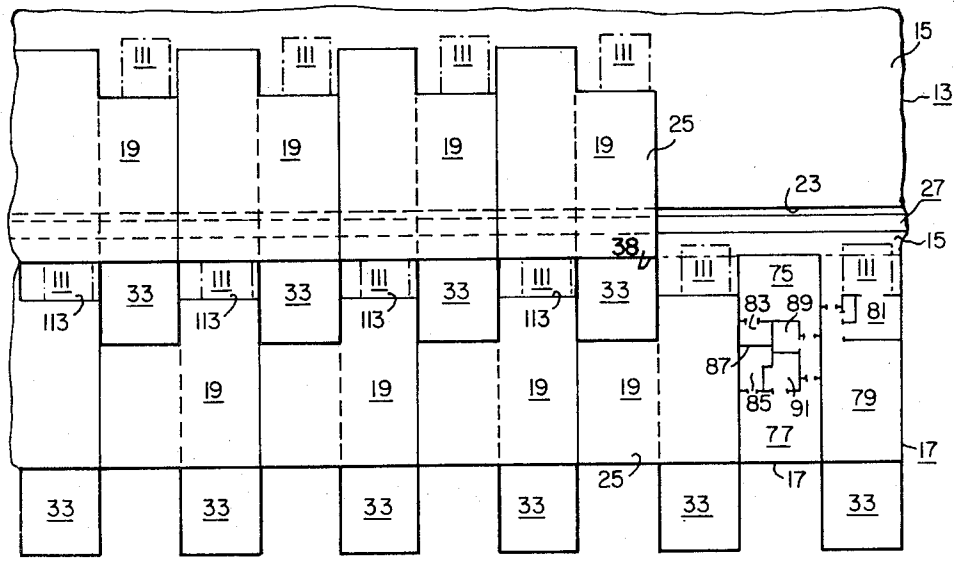
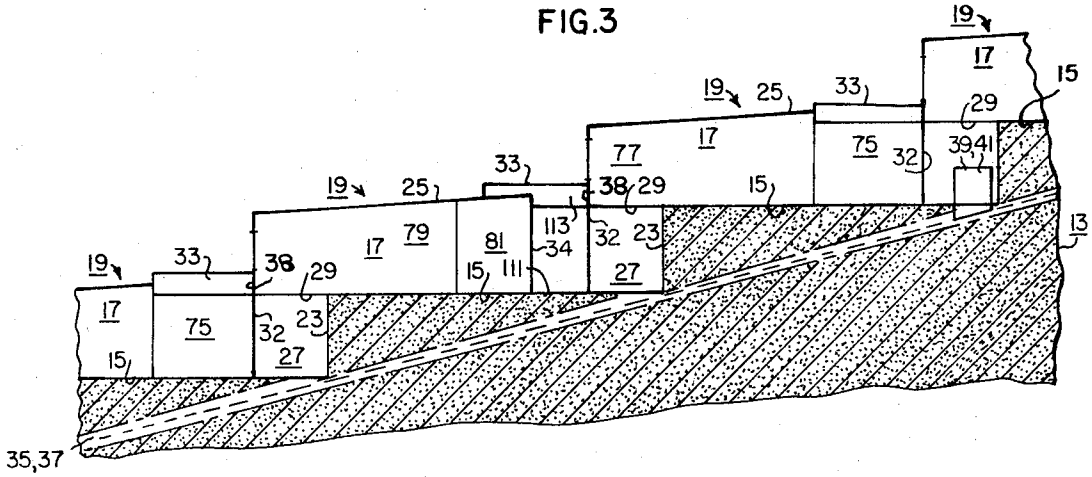

III
19
25
15
13
23
27
38
33
113
75
83
89
81
87
85
91
79
77
17

FIG.3


19
17
15
19
25
33
29
77
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75
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39
41
33
19
25
38
29
15
13
113
32
23
79
81
34
17
15
111
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38
29
17
75
32
23
15
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35,37

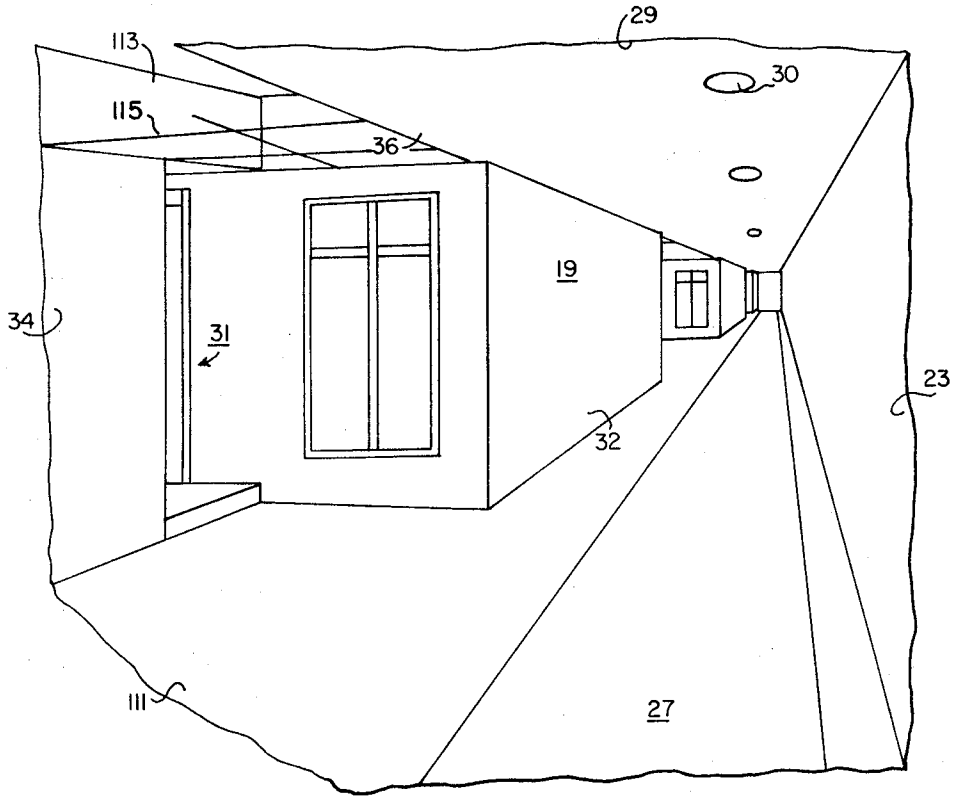

29
113
30
115
36
19
34
31
23
32
111
27

FIG.4

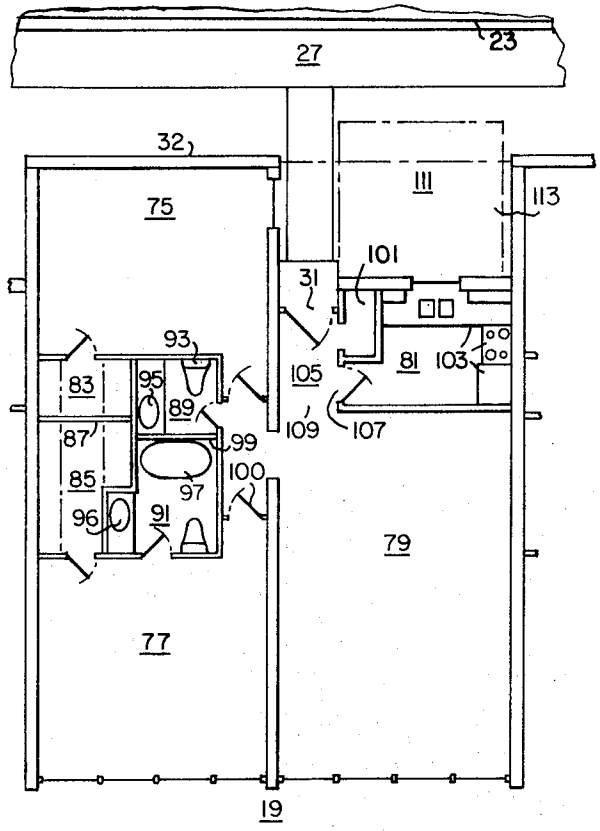
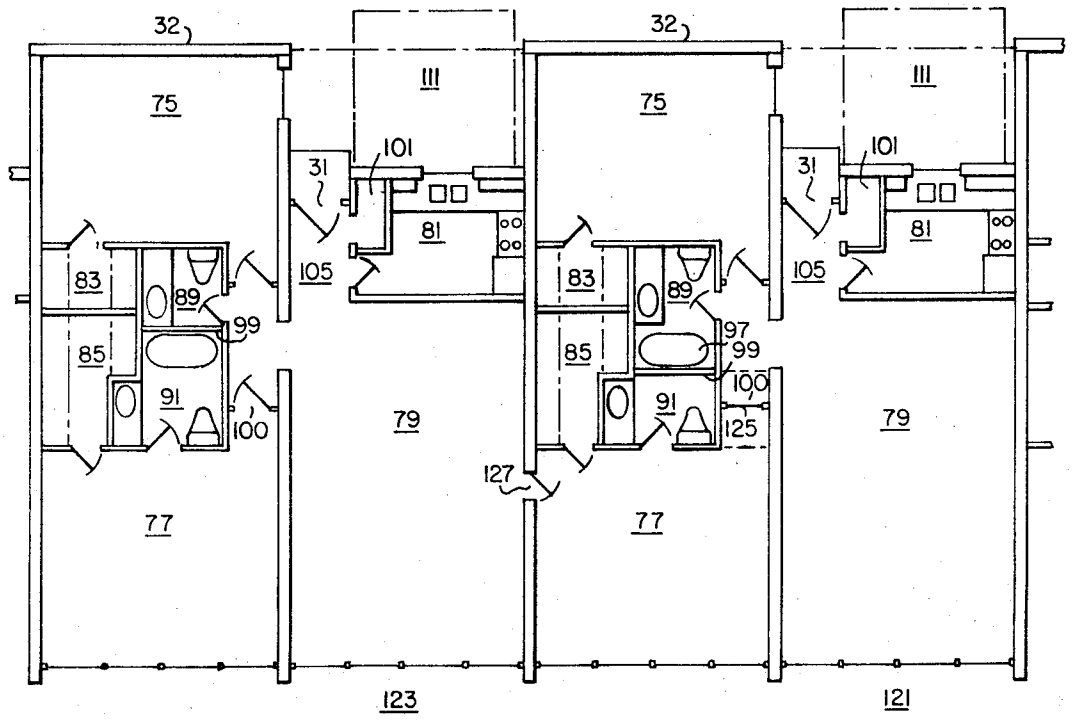

27
23
32
75
111
113
101
31
93
83
95
89
105
81
103
87
109
107
99
85
100
97
96
91
79
77
19

FIG.5

FIG.6


32
32
75
75
111
111
101
101
31
31
81
81
105
105
83
83
89
89
99
97
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85
99
91
91
100
100
125
79
79
127
77
77
123
121

HOUSING ASSEMBLY ON A HILLSIDE

BACKGROUND OF THE INVENTION

This invention relates to the housing art and it has particular relationship to housing assemblies including a number of dwelling units constructed on a selected area. In producing a housing assembly on a hill the practice, in accordance with the teachings of the prior art, is to lay out streets on the hill and to build the units along these streets. Each unit usually has its own service facilities and may have a garage for parking its vehicles. Passenger vehicles and trucks may also be parked on the street. Vehicular traffic moves along the streets at all times. To a large extent the units on the hill look into the adjacent houses or those on the opposite side of the street instead of having a view away from the hill.

This prior-art practice is uneconomical. The number of units which can be built along the streets with their own services and parking facilities is limited. The cost of installing the streets even for a limited number of units is high. In addition, there are many hills, particularly in crowded urban areas, which cannot accommodate the streets and the housing units along them.

Other prior-art practice is to build high-rise apartments. Such apartments have the disadvantages that privacy is minimized and that the residents do not have immediate access to ground.

It is an object of this invention to overcome the above-described disadvantages of the prior-art practice and to provide a housing assembly, particularly suitable for hills, which shall avail itself economically of the area on the hill and shall lend itself to use on hills of all types. It is also an object of this invention to provide a housing assembly on a hill in which each unit shall have a clear view away from the hill, immediate access to the ground and an area or court open to the sky, and in which each unit shall afford its occupants the maximum privacy and security.

SUMMARY OF THE INVENTION

In accordance with this invention, a hill, on which a housing assembly is to be built, is formed into terraces at different levels and the housing units are built on the terraces. Successive terraces along the hill may be at different elevations but in accordance with an aspect of this invention the elevation of each terrace above the terrace below is of the same magnitude, the magnitude being such as to just accommodate the height of the housing units on the lower terrace. In this way the most economical use is made of the area afforded by the hill for housing. The housing units are advantageously one-story units, the roof of the housing unit on a terrace being typically about 9 feet above the ground. The elevation of each terrace above the one immediately below is then about 9 feet. With this construction the housing units on each terrace have a clear view away from the hill and are provided with the usual picture windows and a patio to take advantage of this view. The height may be appropriately increased where the steepness of the hill demands it.

The housing units on each terrace may be an array of adjacent modules, each module including two bedrooms with their bathroom facilities aligned along the width of the terrace and a living-dining room and kitchen contiguous to the bedrooms and also aligned

along the width of the terrace. The modules are readily convertible into one or three-bedroom housing units. Three alternatives are thus available. Typically each module may be about 40 feet in length along the width of the terrace.

Between the units on each terrace and the wall rising from its terrace to the next terrace there is a space providing a pedestrian passageway to the units and an area, open to the sky, which may serve for a court, garden or the like. The wall between the terraces may be in part a retaining wall or, where the terrain is rocky, the wall may be the bare terrain. In accordance with an aspect of this invention, the units on each terrace extend over the passageway for the units on the terrace just below. This extension of the units above does not obstruct the area open to the sky of the units below.

The passageways along each terrace for the units are approachable from a pedestrian approach extending along the hill generally perpendicular to the terraces. For elevation between terraces of about 9 feet and module width of about forty feet, the angle of this approach to the horizontal is about 13° (arc tan .23). Such an approach can be readily traversed on foot. However, in the practice of this invention, the approach is provided with a driven rise such as an escalator, belt, incline or the like. Pairs of such driven mechanisms may be spaced along the hill, one mechanism of each pair moving upwardly and the other downwardly, or there may be single reversible mechanisms with the usual automatic controls.

The passageways and approaches are capable of being used only by pedestrians and household vehicles such as bicycles or carts. The assembly is provided at its outer perimeter with one or more garages or parking areas for vehicles and a center for recreation and services, such as a central temperature control system for heating and cooling the units, water-supply, solid waste and sanitary sewage removal facilities and electrical-power distribution system.

BRIEF DESCRIPTION OF THE DRAWINGS

For a better understanding of this invention, both as to its use and as to its method of operation, together with additional objects and advantages thereof, reference is made to the following description, taken in connection with the accompanying drawings, in which:

FIG. 1 is a view in perspective showing a housing assembly in accordance with this invention;

FIG. 2 is a fragmental view showing plan views of housing units on adjacent terraces;

FIG. 3 is a view in section taken along line III—III of FIG. 1;

FIG. 4 is a fragmental view in perspective showing a portion of the passageway for housing units on a terrace and parts of the adjacent units;

FIG. 5 is a plan view of a typical two-bedroom module which forms the basis of the housing units in accordance with this invention; and

FIG. 6 is a fragmental plan view showing the manner in which two adjacent modules are formed into a one-bedroom and a three-bedroom apartment.

DETAILED DESCRIPTION OF EMBODIMENT

FIG. 1 shows a housing assembly 11 on a hill 13. The hill 13 is formed into terraces 15 and housing units 17

are built on each of the terraces **15**. The housing units **17** are formed of abutting single-story modules **19** (FIGS. **2**, **5**, **6**). The walls **23** between succeeding terraces are of approximately the same height, this height being such that the roofs **25** of the units **17** on any terrace **15** are about at the level of the ground of the terrace **15** just above. The units **17** on each terrace **15** thus have a clear view away from the hill **13**.

The units **17** on each terrace **15** have an access pedestrian passageway **27**. The bases **29** of the units **17** on each upper terrace **15** extend over the passageway **27** of the terrace just below providing shelter for those approaching the entrances **31** of each of the units **17** on the lower terrace. Lighting units **30** may be provided in the bases **29**. Each unit **17** includes a patio **33** which extends beyond the base **29** that is the cover for the passageway **27** of the unit **17** on the terrace **13** just below. The patio **33** may be omitted or recessed back from the cover **29**. The roofs **25** of the units **17** on the terrace **13** below may thus serve to support the patios **33**. The base **29** and the associated front portion of a unit **17** on an upper terrace is supported by the rear wall **32** of the corresponding unit on the just lower terrace. The wallward or passageway half-portion of each module forming a unit **17** is set back from the other half of the module (see FIG. **4** and **5**) to wall **34** so that the base **29** of the upper unit merely spans the setback portion, span **36**, providing a court having an opening to the sky. For lower-cost units the sheltering base **29** can be modified by recessing the units **17** on the upper terraces so that the front wall **38** rests only on its terrace flush with wall **23** and the passageway **27** is no longer totally covered. In this case the patios **33** can be omitted or, if included, no longer rest on the roofs **25** of the unit **17** just below.

Pedestrian approaches **35** and **37** are provided for the passageways **27**. These approaches **35** and **37** are at right angles to the terraces and intersect the passageways **27** at all levels. The approaches **35** and **37** may be enclosed by a cover **40**, and heated or cooled, and provided with driven lifts **39** and **41** such as escalators, or belts, or inclines along which those entering or leaving the units may be moved. While the approaches **35** and **37** should preferably be at an angle of no more than about **15** degrees to the horizontal for the comfort of the passengers, the angle may be as high as 30° particularly where the lifts have cabs similar to elevators. One of the lifts **39** may be driven upwardly and the other **41** downwardly or a reversible lift may be included.

The housing assembly **11** includes a facility **51** for parking, recreation and service adjacent a highway **52**. This facility includes multi-level garages **53** and **55** approachable by ramps **57** opening into the different levels. The ramps **57** are housed in a building **59** which has a swimming pool **61** on its roof. A tennis court **63** and other like recreational facilities may be provided on the roofs of the garages **53** and **55**. The heating and cooling equipment (not shown) may be in a building **71** near the facility **51**. Electrical power is supplied through underground cables (not shown) and the heating or cooling air is supplied through underground conductors (not shown). Water, sanitary sewage and surface water is conducted through underground conductors (not shown). The facility **51** includes provisions (not shown) for disposing of solid waste. Other services are similarly provided.

Each module **19** includes two bedrooms **75** and **77**, a living-dining room **79** and a kitchen **81**. The bedrooms **75** and **77** are back-to-back and have respective closets **83** and **85** having a common wall **87**. A bathroom **89** and **91** is associated with each bedroom **75** and **77**. Each bathroom **89**, **91** includes a commode **93** and **94** and a sink **95** and **96** on the side towards the associated bedroom. A bathtub **97** may be included in one or the other of the bathrooms by selective positioning of a wall **99**. For a two-bedroom unit the wall is positioned so that the bathtub **97** is in the bathroom **91** for bedroom **77**. In this case there is an open passage **100** between the bedrooms **75** and **77**. The kitchen **81** has the usual appliances **103**.

The entrance **31** leads into a hallway **105** which has a lateral clothes closet **101** and lateral opening **107** into the kitchen **81** and a direct opening **109** into the living-dining room **79**. Each module **19** has a court **111** outside of the kitchen **81**. Each court **111** is directly below the space **113** bounded by the patio **33** of the unit just above and the portion of the cover **29** adjacent the patio **33** and is open to the sky. The space **113** may be provided with a permanent or removable transparent or translucent dome or cover **115** and may be heated or cooled as required. With the covers **38** and **115** and the shelters **29** the total assembly can be used even under most extreme climatic conditions.

Two modules may be converted into a one-bedroom apartment **121** and a three-bedroom apartment **123** (FIGS. **2**, **6**) by positioning the wall **99** so that the bathtub **97** is in the bathroom **75** and providing a closure **125** for opening **100**. In this case bedroom **75** of one module is the bedroom of the one-bedroom apartment **121** and the bedroom **77** of this module is added to the abutting module **19** and an opening **127** is provided between the living-dining room **79** of the latter module and the added bedroom **77** forming the three-bedroom unit **123**. Alternatively, two single closet units may be installed on each side of opening **100**. Indicated by broken lines on FIG. **6**.

As shown in FIG. **6** the modules on each terrace are abutted with their living-dining room kitchen section and their bedroom sections in the same order. With this construction the third bedroom **77** of a three-bedroom unit is separated from the bedroom **77** of the two-bedroom section by the living-dining room. An alternative is a construction in which the modules are in abutting pairs in each of which the bedroom sections are contiguous and the living-dining room-kitchen sections are remote on opposite sides of the respective bedroom sections. With such a structure the three bedrooms of a three-bedroom unit are together.

The expression "the living quarters are predominately on one story only" in the claims is intended to mean that the portion of the living quarters where the occupying family spends most of its time is on one story only. This portion usually includes the kitchen, living room and at least one bedroom (FIGS. **2** and **6**). A unit which is in the form of a story and one-half but still effectively retains the function of the hillward out-of-doors facility and its advantages is regarded as within the scope of this expression; likewise a unit including a bathroom, bedroom, or game room or the like which is

partly underground is within the scope of this expression.

While preferred embodiments of this invention are disclosed herein, many modifications thereof are feasible. This invention is not to be restricted except insofar as is necessitated by the spirit of the prior art.

I claim:

1. A housing assembly for disposition on a hill having a plurality of independent ground supports at different elevation, each of said supports capable of itself supporting a separate housing unit, said assembly including a plurality of housing units in which the living quarters are predominately on one story only, each of said units being supportable on a said ground support substantially independently of the others and having a separate access, the said units comprising at least a first housing unit on one of said supports, a second housing unit on the support immediately above said one support, said first housing unit being separated from said hill by a passageway directly out-of-doors from said first unit forming said access to said first housing unit, said second housing unit extending in part over the said passageway to the first housing unit and providing a shelter for said passageway.

2. The apparatus of claim 1 wherein the angle to the horizontal of a plane defined by the ends of succeeding supports is of the order of 15°.

3. The assembly of claim 1 wherein the passageway is approachable from an approach generally perpendicular to the supports.

4. The housing assembly of claim 1 wherein the passageway is approachable by a driven rise.

5. The assembly of claim 3 wherein the approach is at an angle of about 14° to 30° to the horizontal.

6. The housing assembly of claim 1 wherein the passageway is a pedestrian passageway capable of use substantially only by pedestrians and household vehicles such as carts and bicycles and the like, an approach to said passageway generally perpendicular to the supports, said approach being a pedestrian approach capable of use only by pedestrians and household vehicles as aforesaid, vehicle parking facilities only on the perimeter of said assembly, and means providing ready access from said facilities to said approach.

7. The housing assembly of claim 1 wherein a portion of the hill extends between the support on which the first housing unit is disposed and the support on which the second housing unit is disposed, there being in the space bounded by the external wall of said first unit and said portion of said hill an area open to the sky for a court.

8. The assembly of claim 7 wherein the first housing unit is formed of two contiguous sections extending along the support on which said housing unit is disposed, one of said sections being set back away from the portion of said hill between said support and the support on which the second housing unit is disposed with reference to the other section, the court being in the setback portion.

9. The assembly of claim 7 wherein the court has a transparent or translucent cover.

10. The housing assembly of claim 7 wherein the living quarters of the first housing unit extend hillward to the space bounded by the external wall of the first unit and the portion of the hill and the area open to the sky provides natural light and ventilation for the said hillward portion of said living quarters.

11. The housing assembly of claim 1 wherein the first and second housing units both have an unobstructed view away from the hill.

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