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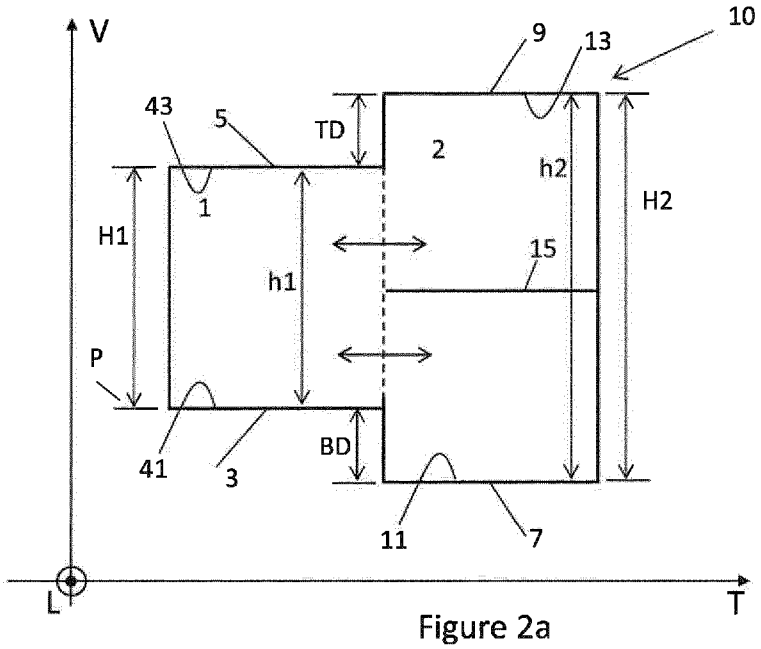

Figure 2a

(57) Abstract: A living module (10) adapted to form part of a living module assembly (22) comprising a plurality of the living modules (10). The living module (10) comprises a first living compartment (1) and a second living compartment (2) which are in internal open communication. The first living compartment (1)comprises a first outer bottom surface (3) extending along a horizontal plane (P). The first living compartment (1) further comprises a first outer top surface (5), spaced apart from the first outer bottom surface(3)as seen in a vertical (V) direction perpendicular to the horizontal plane (P). The second living compartment (2) comprises a second outer bottom surface (7) extending along a plane parallel to the horizontal plane(P). The second living compartment (2) further comprises a second outer top surface (9) spaced apart from the second outer bottom surface (7),as seen in the vertical direction (V). A largest distance in the vertical direction (V) between the first outer bottom surface (3) and the first outer top surface (5) is a first height(H1). A largest distance in the vertical direction (V) between the second outer bottom surface (7) and the second outer top surface (9) is a second height (H2). The first height (H1) is smaller than the second height (H2). The second living compartment (2) comprises a second compartment

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WO 2019/219686 A1

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internal floor (11) extending along a plane parallel to the horizontal plane (P). The second living compartment (2) further comprises a second compartment internal ceiling (13) spaced apart from the second compartment internal floor (11),as seen in the vertical direction (V). The second living compartment (2) further comprises an upper floor configuration (15) situated between the second compartment internal floor (11) and the compartment internal ceiling (13) and extending substantially parallel to the second compartment internal floor (11), thereby forming at least a living area between the upper floor configuration (15) and the second compartment internal ceiling (13). The first outer top surface (5) of the living module (10) is adapted to receive a second outer bottom surface (7s) of a second living module (10s) of the same type and the second outer top surface (9) of the living module is adapted to receive a first outer bottom surface (3s) of the second living module (10s), when the second living module (10s) is placed on the living module (10). The present disclosure further relates to a living module assembly (22) comprising a plurality of living modules. The present disclosure also relates to a living unit assembly (37) comprising a plurality of living units.

LIVING MODULE AND LIVING MODULE ASSEMBLY COMPRISING A PLURALITY OF LIVING MODULES.

TECHNICAL FIELD

The present disclosure relates to a living module adapted to form part of a living module assembly comprising a plurality of living modules. The present disclosure further relates to a living module assembly comprising a lower and an upper living module. The present disclosure also relates to a living unit assembly comprising a plurality of living units.

BACKGROUND OF THE INVENTION

Compact living complexes or buildings, comprising living quarters for a plurality of occupants, are increasingly gaining interest for many reasons. The need for compact living areas generally stems from a limitation on space available for the construction of a living complex, due to physical and/or regulatory aspects, and/or from a desire to limit the space of a living complex due to economic considerations. However, even if the available space is limited, an occupant generally still demands a living space that offers several different functionalities. These may include a sleeping area, a storage area, a kitchen area, a bathroom area, an office area, and a living room area. It is desirable to provide improved compact living quarters with reasonable living standards for everyday life, which at the same time enable construction of space-effective living complexes, thus being cost-effective.

As may be realized from the above, it would be desirable to achieve living quarters, which have internal living areas enabling a more comfortable living situation for occupants, for a living complex or building of more compact configuration than prior solutions.

SUMMARY OF THE INVENTION

The object of the present disclosure is to overcome or ameliorate at least one of the disadvantages of the prior art, or to provide a useful alternative.

The above object may be achieved by the subject matter of claim 1. Embodiments are set forth in the appended dependent claims, in the following description and in the drawings.

Thus, a first aspect of the present disclosure relates to a living module adapted to form part of a living module assembly comprising a plurality of the living modules. The living module comprises a first living compartment and a second living compartment which are in internal open communication.

The first living compartment comprises a first outer bottom surface extending along a horizontal plane. The first living compartment further comprises a first outer top surface, spaced apart from the first outer bottom surface as seen in a vertical direction perpendicular to the horizontal plane.

The second living compartment comprises a second outer bottom surface extending along a plane parallel to the horizontal plane. The second living compartment further comprising a second outer top surface spaced apart from the second outer bottom surface, as seen in the vertical direction.

A largest distance in the vertical direction between the first outer bottom surface and the first outer top surface is a first height. A largest distance in the vertical direction between the second outer bottom surface and the second outer top surface is a second height. The first height is smaller than the second height.

The second living compartment comprises a second compartment internal floor extending along a plane parallel to the horizontal plane. The second living compartment further comprises a second compartment internal ceiling spaced apart from the compartment internal floor, as seen in the vertical direction.

The second living compartment further comprises an upper floor configuration situated between the second compartment internal floor and the second compartment internal ceiling and extending substantially parallel to the second compartment internal floor, thereby forming at least a living area between the upper floor configuration and the second compartment internal ceiling.

The first outer top surface of the living module is adapted to receive a second outer bottom surface of a second living module of the same type and the second outer top surface of the living module is adapted to receive a first outer bottom surface of the second living module, when the second living module is placed on the living module.

A living module as recited above implies a living module with complementary top and bottom outer surfaces of the first and second living compartment respectively, thus enabling a living module to receive a second living module of the same type, the second

living module being placed on the living module mirrored. In other words, the bottom outer surfaces of the second living module, when mirrored, matches the top outer surfaces of the living module, thereby enabling two living modules to be placed on top of each other like two matching pieces of a puzzle. This has the positive effect of enabling a vertical stacking of a plurality of living modules which uses the available space and height effectively.

For a living module as recited above, the second outer bottom surface extends along a plane parallel to the horizontal plane of the first outer bottom surface, thus which plane is spaced apart from the horizontal plane in a vertical direction. In this way, the first outer bottom surface and the second outer bottom surface are spaced apart in a vertical direction. The first outer top surface and the second outer top surface are also spaced apart in the vertical direction due to the difference in height between the first and second compartment. In this way, the top and bottom outer surfaces of the living module are complementary to each other and hence two living modules may be placed on top of each other such that the available space and height is used effectively.

For a living module as described herein, an outer top surface or outer bottom surface is a surface of the living module that faces and/or abuts an outer surface of an adjacently placed living module and/or at least partially faces an external environment of the living module.

The first living compartment may comprise a first compartment internal floor extending along a plane parallel to the horizontal plane. The first living compartment may further comprise a first compartment internal ceiling spaced apart form said first compartment internal floor, as seen in the vertical direction.

The first living compartment may comprise a living area between the first compartment internal floor and ceiling. As set out herein, a living area refers to an area intended for living activities or functions normally associated with a living quarter. As such, a living area of the first living compartment may comprise or constitute, for example, a sleeping area which may comprise a bed, an office or study area which may comprise a desk and chair, a storage area which may comprise drawers or full size closets, a bathroom area, a kitchen area and a dining area and/or a seating area.

The first living compartment may comprise a front door of the living module.

The second living compartment may further comprise a living area between the second compartment internal floor and the upper floor configuration. As a result, the second living compartment comprises two living areas, situated on two different levels as seen in the vertical direction. This for instance enables a complementary distribution of the available space, or height more specifically. The living areas of the second living compartment may comprise or constitute, for example, a sleeping area which may comprise a bed, an office or study area which may comprise a desk and chair, a storage area which may comprise drawers or full size closets, a bathroom area, a kitchen area, a dining area and/or a seating area.

As a result of the heights of the first and second living compartments being centred horizontally, an internal floor level of the first living compartment will be situated on a higher level as seen in the vertical direction than the compartment internal floor level of the second living compartment, since the height of the first living compartment is smaller than the height of the second living compartment. Similarly, the upper floor configuration level of the second living compartment will be situated on a higher level as seen in the vertical direction than the internal floor level of the first living compartment. As a result, access between the first living compartment and the two different floor levels of the second living compartment may be carried out by utilizing staircases.

In other words, the living module may be viewed as comprising or consisting of a one-floor living compartment and a two-floor living compartment which are in internal open communication with each other. This has the positive effect of enabling a spacious and attractive floor plan of the living module and at the same time effectively using the available space and height.

A top distance in the vertical direction between the first and second outer top surfaces of the living module and a bottom distance in the vertical direction between the first and second outer bottom surfaces of the living module may be substantially equal. This provides a living module with the advantage of having complementary top and bottom outer surfaces of the first and second living compartment respectively, thus enabling a living module to receive a second living module of the same type, the second living module being placed on the living module mirrored. In this context, substantially equal implies that there may be a difference due to the construction process, i.e. a tolerance is acceptable from a building point of view whilst still maintaining the function of matching

top outer surfaces of a living module with the bottom outer surfaces of a second living module placed on the living module. As a non-limiting example, a difference between the top distance and the bottom distance, divided by the top distance may have a value of 0.15 or less, more preferably a value of 0.1 or less, even more preferably a value of 0.07 or less, most preferably a value of 0.05 or less.

The living module further extends in a longitudinal direction and a transversal direction, which are perpendicular to each other and to the vertical direction. The first and second living compartments are located on opposite sides of a vertical plane extending in the longitudinal and vertical directions. The living module may be adapted to receive the second living module such that, the vertical plane of the living module and a vertical plane of the second living module are aligned in the vertical direction.

The living module may comprise a first outer wall extending in the vertical direction and parallel to the vertical plane, between the first outer top and bottom surfaces of the first living compartment, and a second outer wall extending in the vertical direction and parallel to the vertical plane between the second outer top and bottom surfaces of the second living compartment. This for instance results in, the vertical planes of the living module and the second living module being aligned, a vertical stack comprising a plurality of living modules, which vertical stack has planar outer walls parallel to the vertical plane.
The first outer wall of the living module is flush with the second outer wall of the second living module. As a result thereof an effective use of space is achieved. Furthermore, this may result in that two vertical stacks may be placed next one another, with a vertical planar outer wall of a vertical stack facing, preferably abutting, a vertical planar outer wall of a second vertical stack. In this case, a vertical outer wall of a vertical stack comprises or consists of first and second outer walls stacked on top in an alternating fashion, reflecting living modules stacked on top of each other, as described above. This has the positive effect of enabling an easy and compact configuration of vertical stacks, i.e. living module assemblies, comprising a plurality of living modules, into even larger living complexes.

As set out herein, an outer wall of the living module is defined as an outer surface facing the external environment of the living module when viewed as a single piece. Further, the outer wall is defined independently of any plurality of accessories and/or protruding parts that may be optionally attached to an outer wall, such as a balcony, bay window, oriel or window awning. As an alternative or complement, as described above, a first or second

outer wall of a living module may face at least partly a first or second outer wall of an adjacent living module, when the two living modules are placed next to each other as seen in the transversal direction.

As an alternative or as a complement, two living modules, such as the living module and the second living module described above may be displaced with respect to one another in the longitudinal direction. This has the positive effect of increasing the versatility of configuring living modules when placed on each other thereby forming a vertical stack.

The first height may be in a range from 2.4 m to 3.2 m. The second height may be in a range from 3.7 m to 4.5 m. The ranges for the first height imply that a living area of a standard standing height may be accommodated in the first living compartment. The ranges for the second height imply that the second living compartment as set out herein has the advantage of being adapted for configuration of living areas on two different floor levels when the height may not enable that two regular floor levels of a standard standing height for both floors may be accommodated in the second living compartment.

A largest distance between the second compartment internal floor and the second compartment internal ceiling in the vertical direction, being a second internal height, may be in a range from 3.5 m to 4.2 m. The ranges for the second internal height imply that the second living compartment as set out herein has the advantage of being adapted for configuration of living areas on two different floor levels when the height may not enable that two regular floor levels of a standard standing height for both floors may be accommodated in the second living compartment.

A largest distance between the first compartment internal floor and the first compartment internal ceiling in the vertical direction, being a first internal height, may be in a range of 2.2 m to 2.8 m. The ranges of the internal height imply that a living area of a standard standing height may be accommodated in the first living compartment.

A largest distance in the transversal direction between the first outer wall and the vertical plane may be a first width of the first living compartment. A largest second distance in a transversal direction between the second outer wall and the vertical plane may be a second width of the second living compartment. The first and second widths may be substantially equal. This for instance results in an effective use of the available space when stacking living modules on top of one another. Each one of the first width and the

second width may be in a range from 3 to 4 m.

Optionally, a footprint of the living module, being a plan area of the living module projected onto a horizontal plane, may have a footprint area of 50 m^2 or less, preferably 40 m^2 or less.

The upper floor configuration may comprise a first floor structure and a second floor structure. In this case, the first floor structure comprises a first living area surface, which first living area surface faces the second compartment internal ceiling. A smallest distance between the first living area surface and the second compartment internal ceiling is a first top distance. The first floor structure further comprises a first bottom surface, facing the second compartment internal floor, and is situated at a first bottom distance from the second compartment internal floor in the vertical direction. The second floor structure comprises a second living area surface. A smallest distance between the second living area surface and the second compartment internal ceiling is a second top distance. The second floor structure further comprises a second bottom surface, facing the second compartment internal floor, and is situated at a second bottom distance from the second compartment internal floor in the vertical direction.
A first ratio of the first top distance to the first bottom distance is in the range from 1.1 to 1.8, and a second ratio of the second top distance to the second bottom distance is in the range from 0.5 to 0.9.

This implies that an upper floor configuration with two different levels may be provided by the first and second floor structures, as seen in the vertical direction. The ranges for the first and second ratio, respectively, further imply that the first floor structure is at a lower position than the second floor structure as seen in the vertical direction. This for instance enables a complementary distribution of the available space, or height more specifically, between the second compartment internal floor and an upper floor configuration provided by the first and second floor structures.

As already mention above, a living area refers to an area intended for living activities or functions normally associated with a living quarter. As such, a living area may constitute, for example, a sleeping area which may comprise a bed, an office or study area which may comprise a desk and chair, a storage area which may comprise drawers or full size closets, a bathroom area, a kitchen area, a dining area or a seating area. Some of these activities and functions are most often carried out by a person when lying down or sitting.

This implies that such a living area does not require full standing height to be useful. However, for practical reasons, such areas desirably are placed next to, or accompanied by, a living area with adequate standing height. Other living activities, or functions, demand adequate standing height, such as when preparing food, getting dressed or taking a shower. What is to be regarded as an adequate standing height naturally depends on a person's stature, and therefore varies. As set out herein, a minimum height of 1800 mm may be regarded as a reasonable adequate standing height.

A particular advantage of a second living compartment as recited above is that, in addition to there being a second compartment internal floor living area offering adequate standing height, a second upper living area can also be provided with adequate standing height. This is by virtue of the fact that the first top distance is greater than the first bottom distance.

Optionally, a minimum distance in the horizontal plane between the first floor structure and the second floor structures may be less than 0.5 m. This implies that the first and second floor structures are horizontally substantially adjacent to each other. As a result, the first and second floor structures may form a substantially coherent upper floor configuration.

Optionally, each one of the first top distance and the second bottom distance may be at least 1800 mm, preferably 1900 mm, more preferably at least 2000 mm. This has the advantageous effect of providing two standing height living areas, one at the second compartment internal floor level and one at the first floor structure level.

The upper floor configuration may comprise a third floor structure. In this case, the third floor structure comprises a third living area surface, which third living area surface faces the second compartment internal ceiling. A smallest distance between the third living area surface and the second compartment internal ceiling is a third top distance. The third floor structure further comprises a third bottom surface, facing the second compartment internal floor, and is situated at a third bottom distance from the second compartment internal floor along the vertical direction. A third ratio of the third top distance to the third bottom distance is in the range from 1.1 to 1.8 or in the range from 0.5 to 0.9. This is advantageous since it further increases the versatility in configuring and fitting different living areas into the living compartment.

In case the third ratio is within the range of 1.1 to 1.8, the first floor structure and the third floor structure may be horizontally separated by the second floor structure. This has the positive effect of creating an upper floor configuration for which a middle section, i.e. the second floor structure in this case, is situated at a higher level, while the other two floor structures on each side of the floor structure offer standing height and enable access to the middle section from either side of the middle section.
In this case, the second living area surface may comprise or consist of a sleeping area, the sleeping area being accessible from either side by the first and third living area surfaces respectively.

As an alternative, in case the third ratio is within the range of 0.5 to 0.9, the second floor structure and the third floor structure may be horizontally separated by the first floor structure. This has the positive effect of enabling an upper floor configuration for which a middle section, i.e. the first floor structure, is situated at a lower vertical level as compared to the other two floor structures on each side of the first floor structure, the first floor structure having a standing height and the second and third floor structure having a reduced height, though being easily accessible from the middle section.

Optionally, the third top distance or the third bottom distance may be at least 1800 mm, preferably at least 1900 mm, more preferably at least 2000 mm.

Optionally the upper floor configuration may be divided by a partition wall thereby forming two separate living areas, each separate living area having a separate access. This for instance increases the versatility in configuring the living area surfaces of the living module.

A second aspect of the present disclosure relates to a living module assembly comprising a plurality of living modules as described herein, wherein a lower living module is adapted to receive an upper living module, and wherein the first outer top surface of the lower living module is adapted to receive the second outer bottom surface of the upper living module, and the second outer top surface of the lower living module is adapted to receive the first outer bottom surface of the upper living module.

This for instance results in a vertical stacking of living modules which effectively uses available space and height. This further implies that a vertical stack of living modules, i.e. a living module assembly, may be formed in which every second living module is rotated

180 degrees in the horizontal plane. A plurality of living modules may for example be 1, 2, 3, 4, 5, 6, 8 or 10. In this way a compact living complex or building may be formed, which may have the same number of storeys as the number of vertically stacked living modules.

As an alternative, or as a complement, a plurality of living module assemblies may further be adapted to be arranged next to each other, i.e. extending from a common horizontal plane in a vertical direction, in which the living module assemblies are arranged so as to share a common stairwell. In this way, even larger living complexes or buildings may be formed which effectively uses available space and height.

Furthermore, living module assemblies may advantageously be arranged next to one another, as previously described, extending from a common horizontal plane in a vertical direction, such that first outer walls of respective living module assembly face each other and second outer walls of the second living modules of respective living module assembly face each other. Preferably, first outer walls and second outer walls, respectively, may be arranged to abut each other, as described above. Thus, a living module assembly as set out herein has the advantage of being adapted for aligning with a second living module assembly in the horizontal direction to effectively use the available space for construction of living complexes comprising a plurality of living modules.

A third aspect of the present disclosure relates to a living unit assembly. The living unit assembly comprises a plurality of living units. The living unit assembly comprises a first and a second living unit, wherein the second living unit is located at least partially above the first living unit.

Each living unit is such that: it comprises a first living compartment and a second living compartment which are in internal open communication.

The living unit extends in a longitudinal direction, a transversal direction, and vertical direction which are perpendicular to each other.

The first living compartment comprises a first compartment internal floor extending along a horizontal plane, which extends in the longitudinal-transversal directions. The first living compartment further comprises a first compartment internal ceiling, spaced apart from the first compartment internal floor, as seen in the vertical direction being perpendicular to the horizontal plane. A largest distance between the first compartment internal floor and the first compartment internal ceiling is a first internal height.

The second living compartment comprises a second compartment internal floor extending along a plane parallel to the horizontal plane. The second living compartment further comprises a second compartment internal ceiling, spaced apart from the second compartment internal floor, as seen in the vertical direction. A largest distance between the second compartment internal floor and the second compartment internal ceiling is a second internal height. The first internal height is smaller than the second internal height.

The second living compartment further comprises an upper floor configuration situated between the second compartment internal floor and the second compartment internal ceiling and extending substantially parallel to the second compartment internal floor, thereby forming at least a second compartment living area between the upper floor configuration and the second compartment internal ceiling. Furthermore, the first and second living compartments of the living unit are located on opposite sides of a vertical plane extending in the longitudinal and vertical directions.

The first compartment internal floor of the living unit is situated at a higher level, in the vertical direction, than the second compartment internal floor of the living unit.
The first compartment internal ceiling of the living unit is situated at a lower level, in the vertical direction, than the second compartment internal ceiling of the living unit.
Further, the second compartment internal ceiling of the first living unit is situated at a higher level, in the vertical direction, than a second compartment internal floor of the second living unit. Moreover, the vertical planes of the first living unit and the second living unit respectively are aligned in the vertical direction.

A living unit assembly as recited above has the positive effect of enabling a vertical stacking of a plurality of living units which effectively uses the available space and height. A plurality of living units may for example be 1, 2, 3, 4, 5, 6, 8, 10, 15 or 20.

Purely by way of example, a living unit assembly according to a third aspect of the present disclosure may be formed by living modules according to the first aspect of the present disclosure. To this end, a living unit assembly may disclose many features in common with of a living module assembly as described herein, and thus may render the same positive effects thereof.
Alternatively, or as a complement, a living unit assembly as described herein may be formed on site, i.e. on the site of construction. This for instance improves the versatility in

configuration of living units into assemblies forming larger living complexes and may also make the construction of high multi-storey living unit assemblies easy and less complicated since a living unit assembly as described herein may be put together by a plurality of construction elements which have been delivered separately to the construction site.

Purely by way of example, the formation of a smaller living complex, such as a two-storey living complex may advantageously be carried out by using a living module assembly as described herein, whilst the formation of a higher multi-storey living complex may advantageously be carried out by the formation of a living unit assembly as described herein, on site. Both approaches may provide a vertical stack of living quarters which shows many common features and has the positive effect of effectively using the available space and height.

The first living compartment of a living unit may comprise a living area. As previously set out herein, a living area refers to an area intended for living activities or functions normally associated with a living quarter. As such, a living area of the first living compartment may comprise or constitute, for example, a sleeping area which may comprise a bed, an office or study area which may comprise a desk and chair, a storage area which may comprise drawers or full size closets, a bathroom area, a kitchen area and a dining area and/or a seating area.

The first living compartment may comprise a front door of the living unit.

The second living compartment of a living unit may further comprise a living area between the compartment internal floor and the upper floor configuration. As a result, the second living compartment comprises two living areas, situated on two different levels as seen in the vertical direction. This for instance enables a complementary distribution of the available space, or height more specifically. The living areas of the second living compartment may comprise or constitute, for example, a sleeping area which may comprise a bed, an office or study area which may comprise a desk and chair, a storage area which may comprise drawers or full size closets, a bathroom area, a kitchen area, a dining area and/or a seating area.

The first compartment internal floor is situated at a higher level as seen in the vertical direction than the second compartment internal floor. Similarly, the upper floor

configuration level of the second living compartment will be situated on a higher level as seen in the vertical direction than the first compartment internal floor level of the first living compartment. As a result, access between the first living compartment and the two different floor levels of the second living compartment may be carried out by utilizing staircases.

In other words, the living unit may be viewed as comprising or consisting of a one-floor living compartment and a two-floor living compartment which are in internal open communication. This has the positive effect of effectively using the available space and height and at the same time enabling a spacious and attractive floor plan of the living unit.

The first compartment internal ceiling of the first living unit and the second compartment internal floor of the second living unit may form opposing sides of a first portion of a floor configuration unit, and the second compartment internal ceiling of the first living unit and the first compartment internal floor of the second living unit may form opposing sides of a second portion of said floor configuration unit. The floor configuration unit may thereby form an interface between the first and second living units in the vertical direction.

In this context, an interface may represent a shared structure between the first and second living units, comprising the internal floors of the second living unit and the internal ceilings of the first living unit.

A floor configuration unit as described above implies that a floor configuration unit with two different levels is provided between the first and second living units, as seen in the vertical direction. It is further implied that the first portion of the floor configuration is at a lower position than the second portion of the floor configuration as seen in the vertical direction. Furthermore, it is implied that the first and second portions of the floor configuration are horizontally substantially adjacent to each other. As a result, the first and second portions of the floor configuration unit form a substantially coherent floor configuration unit.

As such, the floor configuration unit may comprise or consist of the floor framing system, i.e. the system of joists between the first and second living units. This is advantageous since the floor configuration unit will function as the carrying structure between the two living units and thus comprise or consist of the respective internal floor and internal ceiling of the second and first living units respectively.

Purely as a non-limiting example, a floor configuration unit intended as the force-carrying interface between the two living units as described above, may be provided as a separate element to a building site. It is envisaged that this enables the initial location of an optional number of such floor configuration units in a first step of construction of a multi-storey living complex, the floor configuration units being spaced apart in the vertical direction. In a following step, it is further envisaged that walls are raised between the floor configuration units so as to form an assembly of living units as described above.

The first internal height may be in a range from 2.2 m to 2.8 m. The second internal height may be in a range from 3.5 m to 4.2 m. The ranges for the first internal height imply that a living area surface of a standard standing height may be accommodated in the first living compartment. The ranges for the second internal height imply that the second living compartment as set out herein has the advantage of being adapted for configuration of living areas on two different floor levels when the height may not enable that two regular floor levels of a standard standing height for both floors may be accommodated in the second living compartment.

A top internal distance in the vertical direction between the first and second internal ceilings and a bottom internal distance in the vertical direction between the first and second internal floors may be substantially equal. As a result, the internal heights of the first and second living compartments are centred horizontally. In this context, substantially equal implies that there may be a difference due to the construction process, i.e. a tolerance within an acceptable range from a building point of view whilst still maintaining the intended function and characteristics the living unit assembly. As a non-limiting example, a difference between the top internal distance and the bottom internal distance, divided by the top internal distance may have a value of 0.15 or less, more preferably a value of 0.1 or less, even more preferably a value of 0.07 or less, most preferably a value of 0.05 or less.

The first compartment internal floor of the living unit may have a first compartment internal floor area. The second compartment internal floor may have a second compartment internal floor area. In this case, a floor area of the living unit, being the sum of the first compartment internal floor area and the second compartment internal floor area, may have a value of 50 m^2 or less, preferably 40 m^2 or less.

Each one of the first and second compartment internal floor areas may for instance be at least 10 m^2.

In a similar manner as previously described for a living module as set out herein, the upper floor configuration of the second living compartment may comprise a first floor structure and a second floor structure.
In this case, the first floor structure comprises a first living area surface, which first living area surface faces the second compartment internal ceiling. A smallest distance between the first living area surface and the second compartment internal ceiling is a first top distance. The first floor structure further comprises a first bottom surface, facing the second compartment internal floor, and is situated at a first bottom distance from the second compartment internal floor in the vertical direction.

The second floor structure comprises a second living area surface. A smallest distance between the second living area surface and the second compartment internal ceiling is a second top distance. The second floor structure further comprises a second bottom surface, facing the second compartment internal floor, and is situated at a second bottom distance from the second compartment internal floor in the vertical direction.

A first ratio of the first top distance to the first bottom distance is within the range of 1.1 to 1.8, and a second ratio of the second top distance to the second bottom distance is within the range of 0.5 to 0.9.

This implies that an upper floor configuration with two different levels may be provided by the first and second floor structures, as seen in the vertical direction. The ranges for the first and second ratio, respectively, further imply that the first floor structure is at a lower position than the second floor structure as seen in the vertical direction. This for instance enables a complementary distribution of the available space, or height more specifically, between the compartment internal floor and an upper floor configuration provided by the first and second floor structures.

As already mention above, a living area refers to an area intended for living activities or functions normally associated with a living quarter. As such, a living area may constitute, for example, a sleeping area which may comprise a bed, an office or study area which may comprise a desk and chair, a storage area which may comprise drawers or full size closets, a bathroom area, a kitchen area, a dining area or a seating area. Some of these

activities and functions are most often carried out by a person when lying down or sitting. This implies that such a living area does not require full standing height to be useful. However, for practical reasons, such areas desirably are placed next to, or accompanied by, a living area with adequate standing height. Other living activities, or functions, demand adequate standing height, such as when preparing food, getting dressed or taking a shower. What is to be regarded as an adequate standing height naturally depends on a person's stature, and therefore varies. As set out herein, a minimum height of 1800 mm may be regarded as a reasonable adequate standing height.

A particular advantage of a living compartment as recited above is that, in addition to there being a compartment internal floor living area offering adequate standing height, a second upper living area can also be provided with adequate standing height. This is by virtue of the fact that the first top distance is greater than the first bottom distance.

Optionally, a minimum distance in the horizontal plane between the first floor structure and the second floor structures may be less than 0.5 m. This implies that the first and second floor structures are horizontally substantially adjacent to each other. As a result, the first and second floor structures may form a substantially coherent upper floor configuration.

Optionally, each one of the first top distance and the second bottom distance may be at least 1800 mm, preferably 1900 mm, more preferably at least 2000 mm. This has the advantageous effect of providing two standing height living areas, one at the compartment internal floor level and one at the first floor structure level.

The upper floor configuration may further comprise a third floor structure.
In this case, the third floor structure comprises a third living area surface, which third living area surface faces the second compartment internal ceiling. A smallest distance between the third living area surface and the second compartment internal ceiling is a third top distance. The third floor structure further comprises a third bottom surface, facing the second compartment internal floor, and is situated at a third bottom distance from the second compartment internal floor along the vertical direction.
A third ratio of the third top distance to the third bottom distance is within the range of 1.1 to 1.8 or within the range of 0.5 to 0.9. This is advantageous since it further increases the versatility in configuring and fitting different living areas into the living compartment.

In case the third ratio is within the range of 1.1 to 1.8, the first floor structure and the third floor structure may be horizontally separated by the second floor structure. This has the positive effect of creating an upper floor configuration for which a middle section, i.e. the second floor structure in this case, is situated at a higher level, while the other two floor structures on each side of the floor structure offer standing height and enable access to the middle section from either side of the middle section.
In this case, the second living area surface may comprise or consist of a sleeping area, the sleeping area being accessible from either side by the first and third living area surfaces respectively.

As an alternative, in case the third ratio is within the range of 0.5 to 0.9, the second floor structure and the third floor structure may be horizontally separated by the first floor structure. This has the positive effect of enabling an upper floor configuration for which a middle section, i.e. the first floor structure, is situated at a lower vertical level as compared to the other two floor structures on each side of the first floor structure, the first floor structure having a standing height and the second and third floor structure having a reduced height, though being easily accessible from the middle section.

Optionally, the third top distance or the third bottom distance may be at least 1800 mm, preferably at least 1900 mm, more preferably at least 2000 mm.

Optionally the upper floor configuration may be divided by a partition wall thereby forming two separate living areas, each separate living area having a separate access. This for instance increases the versatility in configuring the living area surfaces of the living unit.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will hereinafter be further explained by means of non-limiting examples with reference to the appended drawings wherein:

Fig. 1 is a schematic side view of living module assemblies according to an embodiment of the present disclosure;

Fig. 2a is a schematic cross section of a living module according to an embodiment of the present disclosure;

Fig. 2b is a schematic side view of a living module assembly according to an embodiment of the present disclosure;

Fig. 3 is a plan area of the living module in Fig. 2a projected onto a horizontal plane;

Fig. 4 is a schematic side view of a living module assembly according to another embodiment of the present disclosure;

Fig. 5 is a schematic cross section of a second living compartment of a living module according to another embodiment of the present disclosure;

Fig. 6a is a schematic cross section of a second living compartment of a living module according to yet another embodiment of the present disclosure;

Fig. 6b is a schematic cross section of a second living compartment of a living module according to yet another embodiment of the present disclosure, and

Fig. 7 is a schematic cross section of a living unit assembly according to an embodiment of present disclosure.

It should be noted that the appended drawings are not necessarily drawn to scale and that the dimensions of some features of the present invention may have been exaggerated for the sake of clarity.

DETAILED DESCRIPTION

The present disclosure will, in the following, be exemplified by embodiments. It should however be realized that the embodiments are included in order to explain principles of the present disclosure and not to limit the scope of the present disclosure, as defined by the appended claims. Details from two or more of the embodiments may be combined with each other.

Figure 1 illustrates a schematic side view of a living complex 100 comprising a plurality of living modules 10a-10l according to an embodiment of the present disclosure. The living complex 100 extends in a vertical direction V, a transversal direction T and a longitudinal direction L, which directions are perpendicular to each other. The living complex 100 is

assumed standing on flat ground G and the vertical direction V being perpendicular to a horizontal plane extending in parallel to the flat ground. The side view of the living complex 100 in Figure 1 extends in the vertical V and transversal T directions. The living complex 100 comprises a plurality of living modules 10a-10l according to an embodiment of the present disclosure.

The living complex 100 is intended to comprise or constitute living quarters for occupants, thus a living module as described herein is primarily intended to function as a flat or apartment for a plurality of occupants, in particular one or two occupants. However, as an alternative or as a complement, a living module may also be used for other purposes such as an office area, a shop, a garbage room, a storage room, a bicycle room, a dentist or doctor´s office etc. This may be advantageous for a living complex 100 as the one schematically illustrated in Figure 1, which comprises several living modules 10a-10l and thus representing a multi-storey living complex presumably hosting a large number of occupants. The living complex in Figure 1 will be described in more detail further below.

First, with reference to Figures 2a, 2b and 3, a living module 10 according to the present disclosure will be described in more detail. In Figure 2a a cross section of a living module 10 is illustrated, which extends in the vertical V and transversal T directions. The living module 10 is adapted to form part of a living module assembly 22 comprising a plurality of living modules, see Figure 2b and also Figure 1, which illustrates a living complex 100 comprising two vertical stacks of living modules 5a, 5b. The living module 10 comprises a first living compartment 1 and a second living compartment 2 which are in internal open communication, as indicated by the double-headed arrows crossing the dashed line which indicates a thought border between the first and second living compartments 1, 2 in the vertical direction V.

The first living compartment 1 comprises a first outer bottom surface 3 extending along a horizontal plane. The first living compartment 1 further comprises a first outer top surface 5 spaced apart from the first outer bottom surface 3 as seen in the vertical direction V. The second living compartment 2 comprises a second outer bottom surface 7 extending along a plane parallel to the horizontal plane. Thus, the plane of the second outer bottom surface is spaced apart in the vertical direction from the horizontal plane of the first outer bottom surface, see Figs. 2a, 2b and 3.
The second living compartment 2 further comprises a second outer top surface 9 spaced apart from the second outer bottom surface 7, as seen in the vertical direction V.

A largest distance in the vertical direction between the first outer bottom surface 3 and the first outer top surface 5 is a first height H1. A largest distance in the vertical direction between the second outer bottom surface 7 and the second outer top surface 9 is a second height H2. The first height H1 is smaller than the second height H2, see Figure 2. The second living compartment 2 comprises a second compartment internal floor 11 extending along a plane parallel to the horizontal plane. The second living compartment 2 further comprises a second compartment internal ceiling 13, spaced apart from the compartment internal floor 11 as seen in the vertical direction V.

The second living compartment 2 further comprises an upper floor configuration 15 situated between the second compartment internal floor 11 and the second compartment internal ceiling 13 and extending substantially parallel to the second compartment internal floor 11, thereby forming at least a living area 17 between the upper floor configuration 15 and the second compartment internal ceiling 13, see Figure 2a.

The first outer top surface 5 of the living module 10 is adapted to receive a second outer bottom surface 7s of a second living module 10s of the same type and the second outer top surface 9 of the living module 10 is adapted to receive a first outer bottom surface 3s of the second living module 10s, when the second living module 10s is placed on the living module 10, see Figure 2b, which illustrates a second living module 10s of the same type placed on the living module 10.

This has the positive effect of enabling a vertical stacking of a plurality of living modules which uses the available space and height effectively.

A top distance TD in the vertical direction V between the first and second outer top surfaces 5, 9 and a bottom distance BD in the vertical direction V between the first and second outer bottom surfaces 3, 7 may be substantially equal, as illustrated in Figure 2a. As a non-limiting example, substantially equal implies that a difference between the top distance TD and the bottom distance BD, divided by the top distance TD may have a value of 0.15 or less, more preferably a value of 0.1 or less, even more preferably a value of 0.07 or less, most preferably a value of 0.05 or less.

The first height H1 may be in a range from 2.4 m to 3.2 m. The second height H2 may be in a range from 3.7 m to 4.5 m. The ranges for the first height H1 imply that a living area of a standard standing height may be accommodated in the first living compartment 1.

The ranges for the second height H2 imply that the second living compartment 2 as set out herein has the advantage of being adapted for configuration of living areas on two different floor levels when the height may not enable that two regular floor levels of a standard standing height for both floors may be accommodated in the second living compartment 2.

The first living compartment 1 may comprise a first compartment internal floor 41 extending along a plane parallel to the horizontal plane P, as illustrated in Figure 2a. The first living compartment 1 may further comprise a first compartment internal ceiling 43 spaced apart from said first compartment internal floor 41, as seen in the vertical direction V.

A largest distance between the second compartment internal floor 11 and the second compartment internal ceiling 13 in the vertical direction V, being a second internal height h2, may be in a range from 3.5 m to 4.2 m. The ranges for the second internal height h2 imply that the second living compartment 2 as set out herein has the advantage of being adapted for configuration of living areas on two different floor levels when the height may not enable that two regular floor levels of a standard standing height for both floors may be accommodated in the second living compartment 2.

A largest distance between the first compartment internal floor 41 and the first compartment internal ceiling 43 in the vertical direction V, being a first internal height h1, may be in a range from 2.2 m to 2.8 m. The ranges of the internal height h1 imply that a living area of a standard standing height may be accommodated in the first living compartment 1.

A plan area of the living module 10 in Figure 2a projected onto a horizontal plane, i.e. in a longitudinal-transversal plane is depicted in Figure 3. The projection represents a footprint of the living module illustrated in Figure 2a. The footprint of the living module 10 has a footprint area A_F which may be 50 m^2 or less, preferably 40 m^2 or less.

As for the living complex 100 described with reference to Figure 1, a living module as described herein extends in the vertical direction V, the transversal direction T, and longitudinal direction L. In Figure 2b, as described above, a living module 10 and a second living module 10s of the same type are illustrated in a side view extending in the vertical and transversal direction is depicted. Thereby, for the living module 10 the first

and second living compartments 1, 2, are located on opposite sides of a vertical plane VP extending in the longitudinal and vertical directions. Similarly, for the living module 10s the first and second living compartments 1s, 2s are also located on opposite sides of the VP. With reference to Figure 2b, the living module 10 may be adapted to receive the second living module 10s such that, the vertical plane VP of the living module 10 and a vertical plane of the second living module 10s are aligned in the vertical direction V. Noticeably, the second living module 10s is rotated 180 degrees in the horizontal plane, extending in the longitudinal and transversal directions, with respect to the living module 10.

The living module 10 is further depicted as comprising a first outer wall 19 extending in the vertical direction V and parallel to the vertical plane VP, between the first outer top and bottom surfaces 5, 3 of the first living compartment 1. The living module 10 further comprises a second outer wall 21 extending in the vertical direction V and parallel to the vertical plane VP between the second outer top and bottom surfaces 9, 7 of the second living compartment 2. As illustrated in Figure 2b, the living module 10 may be adapted to receive the second living module 10s such that, the first outer wall 19 of the living module 10 is aligned with a second outer wall 21s of the second living module 10s in the vertical direction V and the second outer wall 21 of the living module 10 is aligned with a first outer wall 19s of the second living module 10s in the vertical direction V.

This for instance results in, the vertical planes VP of the living module 10 and the second living module 10s being aligned, a living module assembly comprising a plurality of living modules, which living module assembly has planar outer walls parallel to the vertical plane VP.

The first outer wall 19 of the living module 10 is flush with the second outer wall 21s of the second living module 10s, as illustrated in Figure 2b. Further, the second outer wall 21 of the living module 10 is flush with the first outer wall 19s of the second living module.

As a result thereof an effective use of space is achieved. Furthermore, this may result in that two vertical stacks of living modules 5a, 5b may be placed next one another, with a vertical planar outer wall of a vertical stack 5a facing, preferably abutting, a vertical planar outer wall of a second vertical stack 5b, as for example illustrated in Figure 1. In this case, a vertical outer wall of a vertical stack comprises or consists of first and second outer walls stacked on top in an alternating fashion, reflecting living modules stacked on top of each other, as described above. This has the positive effect of enabling an easy and compact configuration of vertical stacks, i.e. living module assemblies, comprising a

plurality of living modules, into even larger living complexes, such as the living complex 100 depicted in Figure 1.

Figure 2b further illustrates an embodiment of a living module assembly 22 according to the present disclosure. As such, the living module assembly comprises a lower module, in this case represented by the living module 10, and an upper living module, in this case represented by the second living module 10s. The lower living module 10 is adapted to receive the upper living module 10s, wherein the first outer top surface 5 of the lower living module 10 is adapted to receive the second outer bottom surface 7s of the upper living module 10s, and the second outer top surface 9 of the lower living module 10 is adapted to receive the first outer bottom surface 3s of the upper living module 10s. Optionally, a living module assembly may comprise a plurality of living modules, for example, 1, 2, 3, 4, 5, 6, 8 or 10. In Figure 1, two living module assemblies, i.e. the vertical stacks 5a, 5b, are illustrated, each comprising six living modules.

Although the living module 10 and the second living module 10s as illustrated in Figure 2b has first and second outer walls 19, 19s, 21, 21s respectively aligned in the vertical direction V, the living module 10 and the second module 10s may be displaced with respect to each other along the longitudinal direction L when the second living module 10s is placed on the living module 10, see Figure 4, illustrating a side view of the two modules 10, 10s of Figure 2b in the vertical-longitudinal directions.

With reference to Figure 2b, a largest first distance in the transversal direction T between the first outer wall 19 and the vertical plane VP is a first width W1 of the first living compartment 1. A largest second distance in a transversal direction T between the second outer wall 21 and the vertical plane VP is a second width W2 of the second living compartment 2. As illustrated in Figure 2b, the first width W1 is substantially equal to the second width W2. This for instance results in an effective use of available space when stacking living modules of the same type on one another. Each one the first width W1 and the second width W2 may be in a range from 3 to 4 m.

With reference to Figure 5, a living module 1 according to an embodiment of the present disclosure will be described in further detail. To this end, Figure 5 depicts a cross section of the second living compartment 2 of a living module, in the vertical-longitudinal V-L directions. In this embodiment, the upper floor configuration 15 comprises a first floor

structure 23 and a second floor structure 25.

The first floor structure 23 comprises a first living area surface A1, which first living area surface A1 faces the second compartment internal ceiling 13. A smallest distance between the first living area surface A1 and the second compartment internal ceiling 13 is a first top distance t_1. The first floor structure 23 further comprises a first bottom surface 27 facing the second compartment internal floor 11, and is situated at a first bottom distance b_1 from the compartment internal floor 11 in the vertical direction V.

The second floor structure 25 comprises a second living area surface A2. A smallest distance between the second living area surface A2 and the second compartment internal ceiling 13 is a second top distance t_2. The second floor structure 25 further comprises a second bottom surface 29, facing the second compartment internal floor 11, and is situated at a second bottom distance b_2 from the second compartment internal floor 11 in the vertical direction V.

A first ratio R_1 of the first top distance t_1 to the first bottom distance b_1 is within the range of 1.1 to 1.8, and a second ratio R_2 of the second top distance t_2 to the second bottom distance b_2 is within the range of 0.5 to 0.9. Hence, as depicted in Figure 5, the upper floor configuration 15 in the second living compartment 2 is provided by the first and second floor structures 23, 25. The ranges of the first and second ratio R_1, R_2, respectively, imply that the first floor structure 23 is situated at a lower level than the second floor structure 25, as seen in the vertical direction V.

A minimum distance in the horizontal plane between the first floor structure 23 and the second floor structure 25 may be less than 0.5 m. This implies that the first and second floor structures 23, 25 are horizontally adjacent to each other. As such, the first and second floor structures 23, 25 may be seen as substantially forming a coherent upper floor configuration 15. However, and as is exemplified in Figure 5, it is also envisaged that the first and second floor structures 23, 25 overlap each other in the transversal direction.

Optionally, each one of the first top distance t_1 and the second bottom distance b_2 may be at least 1800 mm, preferably at least 1900 mm, more preferably at least 2000 mm. This has the advantageous effect of providing at two standing height living areas, one at the second compartment internal floor 11 and one for the first floor structure level 23.

With reference to Figures 6a and 6b, further embodiments of the present disclosure will be described in further detail.

As illustrated in Figure 6a and 6b, the upper floor configuration 15 further comprises a third floor structure 31, in addition to a first floor structure 23 and a second floor structure 25.

In this case, the third floor structure 31 comprises a third living area surface A3, which third living area surface A3 faces the second compartment internal ceiling 13. A smallest distance between the third living area surface A3 and the second compartment internal ceiling 13 is a third top distance t_3. The third floor structure 31 further comprises a third bottom surface 33, facing the compartment internal floor 11, and is situated at a third bottom distance b_3 from the second compartment internal floor 11 along the vertical direction V. A third ratio R_3 of the third top distance t_3 to the third bottom distance b_3 is within the range of 1.1 to 1.8 or within the range of 0.5 to 0.9.

This is advantageous since it further increases the possible ways of configuring and fitting different living areas into the second living compartment.

The third top distance (t_3) or the third bottom distance (b_3) may be at least 1800 mm, preferably at least 1900 mm, more preferably 2000 mm. As such, the third floor structure may provide a further living area on the upper floor configuration or on the second compartment internal floor that has adequate standing height.

Figure 6a depicts a cross section of the second living compartment 2 of a living module in the vertical-longitudinal directions V-L according to an embodiment of the present disclosure. In this case, the second floor structure 25 and the third floor structure 31 are horizontally separated by the first floor structure 23. This has the positive effect of enabling an upper floor configuration 15 for which a middle section, i.e. the first floor structure 23, is situated at a lower vertical level as compared to the other two floor structures 25, 31 on each side of the first floor structure 23, the first floor structure 23 having a standing height and the second and third floor structures 25, 31 having a reduced height, though being easily accessible from the middle section. The second floor structure 23 and the third floor structure 31 may be horizontally separated by the first floor structure 25, when the third ratio R_3 is within the range of 0.5 to 0.9.

Figure 6b depicts a cross section of a second living compartment 2 in the vertical-longitudinal directions V-L according to yet another embodiment of the present disclosure.

In this case, the first floor structure 23 and the third floor structure 31 are horizontally separated by the second floor structure 25. This has the positive effect of creating an upper floor configuration 15 for which a middle section, i.e. the second floor structure 25 in this case, is situated at a higher level and is accessible from either side by areas providing standing height. The first floor structure 23 and the third floor structure 31 may be horizontally separated by the second floor structure 25, when the third ratio R_3 is within the range of 1.1 to 1.8.

Optionally the upper floor configuration 15 may be divided by a partition wall 35 thereby forming two separate living areas, each separate living area having a separate access, as illustrated by the dashed lines extending between the upper floor configuration 15 and the compartment internal ceiling 13 in Figure 6b.

As described above, Figure 1 illustrates a living complex comprising two vertical stacks, i.e. two living module assemblies, 5a, 5b. As a result, pairs of living modules being situated next to one another in the transversal direction, since the vertical stacks 5a, 5b are placed next to one another, each living module in respective vertical stack thereby is situated at a separate storey of the living complex 100. Hence, the living complex 100 illustrated in Figure 1 may form a six-storey high living complex with two living modules situated on each storey. Thus, a living module assembly as set out herein has the advantage of being arranged next to a living module assembly of the same type, such that they can share a common staircase.

Optionally, as described above, any number of living module assemblies may be arranged so as to form even larger living complexes.
Thus, living complexes or buildings comprising a variety of configurations of living module assemblies may be formed which provides a large number of living modules in an effectively dense arrangement.

Figure 7 illustrates a schematic cross section of a living unit assembly 37 according to an embodiment of the present disclosure. Noticeably, and as will be apparent by the following detailed description, the living unit assembly 37 may disclose many features in common with the living module assembly 22 illustrated in Figure 2b. To this end, a living unit assembly 37 as illustrated in Figure 7 may be formed by living modules 10 as described herein. As an alternative, or as a complement, the living unit assembly 37 may be constructed on site.

A living unit assembly 37 comprises a plurality of living units according to an embodiment of present disclosure will be described in more detail with reference to Figure 7. The living unit assembly 37 comprises a first and a second living unit 39, 39s, wherein the second living unit 39s is located at least partially above the first living unit 39.
Each living unit 39, 39s is such that: it comprises a first living compartment 1, 1s and a second living compartment 2, 2s which are in internal open communication. The living unit 39, 39s extends in a longitudinal direction L, a transversal direction V, and vertical direction V which are perpendicular to each other. the double-headed arrows crossing the dashed line, which indicates a thought border between the first and second living compartments 1, 2 in a vertical direction V, indicates that the first living compartment 1, 1s, and second living compartment 2, 2s are in internal open communication.

The first living compartment 1, 1s comprises a first compartment internal floor 41, 41s extending along a horizontal plane P, which extends in the longitudinal-transversal L-T directions. The first living compartment 1, 1s further comprises a first compartment internal ceiling 43, 43s spaced apart from the first compartment internal floor 41, 41s as seen in the vertical direction V being perpendicular to the horizontal plane P. A largest distance between the first compartment internal floor 41 and the first compartment internal ceiling 43 is a first internal height h1 (only illustrated for the first living unit 39 in Figure 7).

The second living compartment 2, 2s comprises a second compartment internal floor 11, 11s extending along a plane parallel to the horizontal plane P. The second living compartment 2, 2s further comprises a second compartment internal ceiling 13, 13s spaced apart from the second compartment internal floor 11, 11s as seen in the vertical direction V. A largest distance between the second compartment internal floor 11 and the second compartment internal ceiling 13 is a second internal height h2 (only illustrated for the first living unit 39 in Figure 7). The first internal height h1 is smaller than the second internal height h2.

The second living compartment 2, 2s further comprises an upper floor configuration 15, 15s situated between the second compartment internal floor 11, 11s and the second compartment internal ceiling 13, 13s and extending substantially parallel to the second compartment internal floor 11, 11s thereby forming at least a second compartment living area between the upper floor configuration 15, 15s and the second compartment internal ceiling 13, 13s. Furthermore, the first and second living compartments 1, 1s, 2, 2s of the

living unit 39, 39s are located on opposite sides of a vertical plane VP extending in the longitudinal L and vertical V directions.

The first compartment internal floor 41, 41s of the living unit 39, 39s is situated at a higher level, in the vertical direction V, than the second compartment internal floor 11, 11s of the living unit 39 , 39s.
The first compartment internal ceiling 43, 43s of the living unit 39, 39s is situated at a lower level, in the vertical direction V, than the second compartment internal ceiling 13, 13s of the living unit 39, 39s.
Further, the second compartment internal ceiling 13 of the first living unit 39 is situated at a higher level, in the vertical direction V, than a second compartment internal floor 11s of the second living unit 39s. Moreover, the vertical planes VP of the first living unit 39 and the second living unit 39s respectively are aligned in the vertical direction V.

A living unit assembly 37 as recited above has the positive effect of enabling a vertical stacking of a plurality of living units 39, 39s which effectively uses the available space and height. A plurality of living units may for example be 1, 2, 3, 4, 5, 6, 8, 10, 15 or 20.

A living unit assembly 37 as described herein implies that it may be formed by living modules 10 as described above. To this end, a living unit assembly 37 discloses many features in common with a living module assembly 22 as described herein, and thus may render the same positive effects thereof.
Alternatively or as a complement, a living unit assembly 37 as described herein may be formed on site, i.e. on the site of construction. This for instance improves the versatility in configuration of living units into assemblies forming larger living complexes and may also make the construction of high multi-storey living unit assemblies easy and less complicated since a living unit assembly as described herein may be put together by a plurality of construction elements which have been delivered separately to the construction site.

Purely by way of example, the formation of a smaller living complex, such as a two-storey living complex may advantageously be carried out by using a living module assembly as described herein, whilst the formation of a higher multi-storey living complex may advantageously be carried out by the formation of a living unit assembly as described herein, on site. Both approaches may provide a vertical stack of living quarters which

shows common characteristic features and has the positive effect of effectively using the available space and height.

In a similar manner as described for a living module as described herein, the first living compartment 1 may comprise a living area. As previously set out herein, a living area surface refers to an area intended for living activities or functions normally associated with a living quarter. As such, a living area of the first living compartment 1 may comprise or constitute, for example, a sleeping area which may comprise a bed, an office or study area which may comprise a desk and chair, a storage area which may comprise drawers or full size closets, a bathroom area, a kitchen area and a dining area and/or a seating area.

The first living compartment 1 may comprise a front door of the living unit.

The second living compartment 2 may further comprise a living area surface between the compartment internal floor 11 and the upper floor configuration 15. As a result, the second living compartment 2 comprises two living areas, situated on two different levels as seen in the vertical direction V. This for instance enables a complementary distribution of the available space, or height more specifically. The living area surfaces of the second living compartment 2 may comprise or constitute, for example, a sleeping area which may comprise a bed, an office or study area which may comprise a desk and chair, a storage area which may comprise drawers or full size closets, a bathroom area, a kitchen area, a dining area and/or a seating area.

The first compartment internal floor 41 is situated at a higher level as seen in the vertical direction V than the second compartment internal floor 11. Similarly, the upper floor configuration level 15 of the second living compartment 2 will be situated on a higher level as seen in the vertical direction V than the first compartment internal floor level 41 of the first living compartment 1. As a result, access between the first living compartment 1 and the two different floor levels of the second living compartment 2 may be carried out by utilizing staircases.

In other words, the living unit 39, 39s may be viewed as comprising or consisting of a one-floor living compartment and a two-floor living compartment which are in internal open communication. This has the positive effect of effectively using the available space and height and at the same time enabling a spacious and attractive floor plan of the living unit.

The first compartment internal ceiling 43 of the first living unit 39 and the second compartment internal floor 11 of the second living unit 39s may form opposing sides of a first portion of a floor configuration unit 45, and the second compartment internal ceiling 13 of the first living unit 39 and the first compartment internal floor 41s of the second living unit 39s may form opposing sides of a second portion of the floor configuration unit 45. The floor configuration unit 45 may thereby form an interface between the first and second living units 39, 39s in the vertical direction V, see Figure 7.

In this context, an interface may represent a shared structure between the first and second living units 1, 2, comprising the internal floors 11s, 41s of the second living unit 39s and the internal ceilings 43, 13 of the first living unit 39.

A floor configuration unit 45 as described above implies that a floor configuration unit 45 with two different levels is provided between the first and second living units 39, 39s, as seen in the vertical direction V. It is further implied that the first portion of the floor configuration unit 45 is at a lower position than the second portion of the floor configuration unit 45 as seen in the vertical direction V, see Figure 7. Furthermore, it is implied that the first and second portions of the floor configuration unit 45 are horizontally substantially adjacent to each other. As a result, the first and second portions of the floor configuration unit 45 form a substantially coherent floor configuration unit 45.

As such, the floor configuration unit 45 may comprise or consist of the floor framing system, i.e. the system of joists between the first and second living units 39, 39s. This is advantageous since the floor configuration unit will function as the carrying structure between the two living units and thus comprise or consist of the respective internal floor and internal ceiling of the second and first living units respectively.

Purely as a non-limiting example, a floor configuration unit intended as the force-carrying interface between the two living units as described above, may be provided as a separate element to a building site. It is envisaged that this enables the initial location of an optional number of such floor configuration units in a first step of construction of a multi-storey living complex, such as a living complex illustrated in Figure 1, the floor configuration units being spaced apart in the vertical direction. In a following step, it is further envisaged that walls are raised between the floor configuration units so as to form an assembly of living units as described above.

The first internal height h1 may be in a range from 2.2 m to 2.8 m. The second internal height h2 may be in a range from 3.5 m to 4.2 m. The ranges for the first internal height h1 imply that a living area surface of a standard standing height may be accommodated in the first living compartment 1. The ranges for the second internal height h2 imply that the second living compartment 2 as set out herein has the advantage of being adapted for configuration of living areas on two different floor levels when the height may not enable that two regular floor levels of a standard standing height for both floors may be accommodated in the second living compartment 2.

As illustrated in Figure 7, a top internal distance td in the vertical direction V between the first and second internal ceilings 43, 13 of the living unit 39 and a bottom internal distance bd in the vertical direction V between the first and second internal floors 41, 11 of the living unit 39 may be substantially equal. As a result the internal heights h1, h2 of the first and second living compartments 1, 2 are centred horizontally. In this context, substantially equal implies that there may be a difference due to the construction process, i.e. a tolerance within an acceptable range from a building point of view whilst still maintaining the intended function and characteristics the living unit assembly. As a non-limiting example, a difference between the top internal distance td and the bottom internal distance bd, divided by the top internal distance td may have a value of 0.15 or less, more preferably a value of 0.1 or less, even more preferably a value of 0.07 or less, most preferably a value of 0.05 or less.

As further indicated in Figure 7, the first compartment internal floor 41 of the living unit 39 may have a first compartment internal floor area A_{41}. The second compartment internal floor 11 may have a second compartment internal floor area A_{11}. In this case, a floor area of the living unit 39, being the sum of the first compartment internal floor area A_{41} and the second compartment internal floor area A_{11}, may have a value of 50 m^2 or less, preferably 40 m^2 or less.
Each one of the first and second compartment internal floor areas A_{41}, A_{11} may for instance be at least 10 m^2.

Similarly to a living module 10 as described herein, the living unit 39, 39s of a living unit assembly 37 may also comprise an upper floor configuration 15 of the second compartment 2 in accordance with the embodiments described with reference to Figures 5, 6a and 6b.

Thus, Figure 5 depicts a cross section of the second living compartment 2 of a living module as described herein, in the vertical-longitudinal directions V-L. However, Figure 5 may equally well illustrate a second compartment 2 of a living unit 39, 39s of a living unit assembly 37. In this embodiment, the upper floor configuration 15 comprises a first floor structure 23 and a second floor structure 25. The first floor structure 23 comprises a first living area surface A1, which first living area surface A1 faces the second compartment internal ceiling 13. A smallest distance between the first living area surface A1 and the second compartment internal ceiling 13 is a first top distance t_1. The first floor structure 23 further comprises a first bottom surface 27 facing the second compartment internal floor 11, and is situated at a first bottom distance b_1 from the compartment internal floor 11 in the vertical direction V.

The second floor structure 25 comprises a second living area surface A2. A smallest distance between the second living area surface A2 and the second compartment internal ceiling 13 is a second top distance t_2. The second floor structure 25 further comprises a second bottom surface 29, facing the second compartment internal floor 11, and is situated at a second bottom distance b_2 from the second compartment internal floor 11 in the vertical direction V. A first ratio R_1 of the first top distance t_1 to the first bottom distance b_1 is within the range of 1.1 to 1.8, and a second ratio R_2 of the second top distance t_2 to the second bottom distance b_2 is within the range of 0.5 to 0.9. Hence, as depicted in Figure 5, the upper floor configuration 15 in the second living compartment 2 is provided by the first and second floor structures 23, 25. The ranges of the first and second ratio R_1, R_2, respectively, imply that the first floor structure 23 is situated at a lower level than the second floor structure 25, as seen in the vertical direction V.

A minimum distance in the horizontal plane between the first floor structure 23 and the second floor structure 25 may be less than 0.5 m. This implies that the first and second floor structures 23, 25 are horizontally adjacent to each other. As such, the first and second floor structures 23, 25 may be seen as substantially forming a coherent upper floor configuration 15. However, and as is exemplified in Figure 5, it is also envisaged that the first and second floor structures 23, 25 overlap each other in the transversal direction.

Optionally, each one of the first top distance t_1 and the second bottom distance b_2 may be at least 1800 mm, preferably at least 1900 mm, more preferably at least 2000 mm. This

has the advantageous effect of providing at two standing height living areas, one at the second compartment internal floor 11 and one for the first floor structure level 23.

As mentioned above, with reference to Figures 6a and 6b further embodiments of the present disclosure have been described in further detail. To this end, Figures 6a and 6b depicts a cross section of the second living compartment 2 of a living module in the vertical-longitudinal directions V-L according to embodiments of the present disclosure. However, as for Figure 5, Figures 6a and 6b, may equally well illustrate a second living compartment 2 of a living unit 39, 39s of a living unit assembly 37 according to yet further embodiments. Thus, the upper floor configuration 15 maay further comprises a third floor structure 31, in addition to a first floor structure 23 and a second floor structure 25. In this case, the third floor structure 31 comprises a third living area surface A3, which third living area surface A3 faces the second compartment internal ceiling 13. A smallest distance between the third living area surface A3 and the second compartment internal ceiling 13 is a third top distance t_3. The third floor structure 31 further comprises a third bottom surface 33, facing the compartment internal floor 11, and is situated at a third bottom distance b_3 from the second compartment internal floor 11 along the vertical direction V. A third ratio R_3 of the third top distance t_3 to the third bottom distance b_3 is within the range of 1.1 to 1.8 or within the range of 0.5 to 0.9.

This is advantageous since it further increases the possible ways of configuring and fitting different living areas into the second living compartment.

Figure 6a depicts a cross section of the second living compartment 2 in the vertical-longitudinal directions V-L according to yet an embodiment of the present disclosure. In this case, the second floor structure 25 and the third floor structure 31 are horizontally separated by the first floor structure 23. This has the positive effect of enabling an upper floor configuration 15 for which a middle section, i.e. the first floor structure 23, is situated at a lower vertical level as compared to the other two floor structures 25, 31 on each side of the first floor structure 23, the first floor structure 23 having a standing height and the second and third floor structures 25, 31 having a reduced height, though being easily accessible from the middle section. The second floor structure 23 and the third floor structure 31 may be horizontally separated by the first floor structure 25, when the third ratio R_3 is within the range of 0.5 to 0.9.

Figure 6b depicts a cross section of a second living compartment 2 in the vertical-longitudinal directions V-L according to yet another embodiment of the present disclosure. In this case, the first floor structure 23 and the third floor structure 31 are horizontally separated by the second floor structure 25. This has the positive effect of creating an upper floor configuration 15 for which a middle section, i.e. the second floor structure 25 in this case, is situated at a higher level and is accessible from either side by areas providing standing height. The first floor structure 23 and the third floor structure 31 may be horizontally separated by the second floor structure 25, when the third ratio R_3 is within the range of 1.1 to 1.8.

The third top distance (t_3) or the third bottom distance (b_3) may be at least 1800 mm, preferably at least 1900 mm, more preferably 2000 mm. As such, the third floor structure may provide a further living area on the upper floor configuration or on the second compartment internal floor that has adequate standing height.

Optionally the upper floor configuration 15 may be divided by a partition wall 35 thereby forming two separate living areas, each separate living area having a separate access, as illustrated by the dashed lines extending between the upper floor configuration 15 and the compartment internal ceiling 13 in Figure 6b.

The present disclosure has been described with reference to several embodiments. The skilled person will understand that many more examples of how various living areas can be distributed throughout the living compartment are conceivable and that the present disclosure is not limited to any particular described layout. Instead, the skilled person will recognize that any variations may be made that fall within the scope of the disclosure as defined by the appended claims.

CLAIMS

1. A living module (10), adapted to form part of a living module assembly (22) comprising a plurality of said living modules (10) , said living module (10) comprising a first living compartment (1) and a second living compartment (2) which are in internal open communication,

said first living compartment (1) comprising a first outer bottom surface (3) extending along a horizontal plane (P),
said first living compartment (1) further comprising a first outer top surface (5) spaced apart from said first outer bottom surface (3), as seen in a vertical direction (V) perpendicular to said horizontal plane (P),

said second living compartment (2) comprising a second outer bottom surface (7) extending along a plane parallel to said horizontal plane (P),
said second living compartment (2) further comprising a second outer top surface (9) spaced apart from said second outer bottom surface (7), as seen in said vertical direction (V),

a largest distance in said vertical direction (V) between said first outer bottom surface (3) and said first outer top surface (5) being a first height (H1),
a largest distance in said vertical direction (V) between said second outer bottom surface (7) and said second outer top surface (9) being a second height (H2),

said first height (H1) being smaller than said second height (H2),

said second living compartment (2) comprising a second compartment internal floor (11) extending along a plane parallel to said horizontal plane (P),
said second living compartment (2) further comprising a second compartment internal ceiling (13) , spaced apart from said second compartment internal floor (11), as seen in said vertical direction (V),
said second living compartment (2) further comprising an upper floor configuration (15) situated between said second compartment internal floor (11) and second compartment internal ceiling (13) and extending substantially parallel to said second compartment internal floor (11), thereby forming at least a living area between said upper floor configuration (15) and said second compartment internal

ceiling (13)

characterized in that

said first outer top surface (5) of said living module (10) is adapted to receive a second outer bottom surface (7s) of a second living module (10s) of the same type and said second outer top surface (9) of said living module (10) is adapted to receive a first outer bottom surface (3s) of said second living module (10s), when said second living module (10s) is placed on said living module (10).

2. A living module (10) according to claim 1, wherein a top distance (TD) in said vertical direction (V) between said first and second outer top surfaces (5, 9) and a bottom distance (BD) in said vertical direction (V) between said first and second outer bottom surfaces (3, 7) are substantially equal.

3. A living module (10) according to claim 1 or 2, wherein said living module (10) further extends in a longitudinal direction (L) and a transversal direction (T), which are perpendicular to each other and to said vertical direction (V),
said first and second living compartments (1, 2) being located on opposite sides of vertical plane (VP) extending in said longitudinal (L) and vertical (V) directions, and wherein said living module (10) is adapted to receive said second living module (10s) such that, said vertical plane (VP) of said living module (10) and a vertical plane (VP) of said second living module (10s) are aligned in said vertical direction (V).

4. A living module (10) according to any one of the preceding claims, wherein said first height (H1) is in a range from 2.4 m to 3.2 m and/or said second height (H2) is in a range from 3.7 m to 4.5 m.

5. A living module (10) according to any one of the preceding claims, wherein a footprint of said living module (10), being a plan area of said living module (10) projected onto a horizontal plane, has a footprint area (A_F) of 50 m^2 or less.

6. A living module (10) according to any one of the preceding claims, wherein said upper floor configuration (15) comprises a first floor structure (23) and a second floor structure (25),
said first floor structure (23) comprising a first living area surface (A1), which first

living area surface (A1) faces said second compartment internal ceiling (13), a smallest distance between said first living area surface (A1) and said second compartment internal ceiling (13) being a first top distance (t_1),
said first floor structure (23) further comprising a first bottom surface (27), facing said second compartment internal floor (11), and being situated at a first bottom distance (b_1) from said second compartment internal floor (11) in said vertical direction (V),
said second floor structure (25) comprising a second living area surface (A2), a smallest distance between said second living area surface (A2) and said second compartment internal ceiling (13) being a second top distance (t_2),
said second floor structure (25) further comprising a second bottom surface (29), facing said second compartment internal floor (11), and being situated at a second bottom distance (b_2) from said second compartment internal floor (11) in said vertical direction (V),
and wherein a first ratio (R_1) of said first top distance (t_1) to said first bottom distance (b_1) is within the range of 1.1 to 1.8, and a second ratio (R_2) of said second top distance (t_2) to said second bottom distance (b_2) is within the range of 0.5 to 0.9.

7. A living module (10) according to claim 6, wherein a minimum distance in said horizontal plane (P) between said first floor structure (23) and said second floor structure (25) is less than 0.5 m.

8. A living module according to any one of claims 6 or 7, wherein each one of said first top distance (t_1) and said second bottom distance (b_2) is at least 1800 mm.

9. A living module (10) according to any one of claims 6 to 8, wherein said upper floor configuration (15) comprises a third floor structure (31),
said third floor structure (31) comprising a third living area surface (A3), which third living area surface (A3) faces said second compartment internal ceiling (13),
a smallest distance between said third living area surface (A3) and said second compartment internal ceiling (13) being a third top distance (t_3),
said third floor structure (31) further comprising a third bottom surface (33), facing said second compartment internal floor (11), and being situated at a third bottom distance (b_3) from said second compartment internal floor (11) along said vertical direction (V),

and wherein a third ratio (R_3) of said third top distance (t_3) to said third bottom distance (b_3) being within the range of 1.1 to 1.8 or within the range of 0.5 to 0.9.

10. A living module (10) according to claim 9, wherein said third ratio (R_3) is within the range of 1.1 to 1.8, and said first floor structure (23) and said third floor structure (31) are horizontally separated by said second floor structure (25).

11. A living module (10) according to claim 9, wherein said third ratio (R_3) is within the range of 0.5 to 0.9, and said second floor structure (25) and said third floor structure (31) are horizontally separated by said first floor structure (23).

12. A living module (10) according to any one of claims 9 to 11, wherein said third top distance (t_3) or said third bottom distance (b_3) is at least 1800 mm.

13. A living module assembly (22) comprising a plurality of living modules according to any one of the preceding claims, wherein a lower living module (10) being adapted to receive an upper living module (10s), wherein said first outer top surface (5) of said lower living module (10) is adapted to receive said second outer bottom (7s) surface of said upper living module (10s), and said second outer top surface (9) of said lower living module (10) is adapted to receive said first outer bottom surface (3s) of said upper living module (10s).

14. A living unit assembly (37) comprising a plurality of living units, said living unit assembly (37) comprising a first and a second living unit (39, 39s) wherein said second living unit (39s) is located at least partially above said first living unit (39), wherein each living unit (39, 39s) is such that:
it comprises a first living compartment (1, 1s) and a second living compartment (2, 2s) which are in internal open communication, wherein

- said living unit (39, 39s) extends in a longitudinal direction (L), a transversal direction (T), and vertical direction (V) which are perpendicular to each other,

- said first living compartment (1, 1s) comprises a first compartment internal floor (41, 41s) extending along a horizontal plane (P), which extends in said longitudinal-transversal (L-V) directions,

said first living compartment (1, 1s) further comprising a first compartment internal ceiling (43, 43s), spaced apart from said first compartment internal floor (41, 41s), as seen in said vertical direction (V) being perpendicular to said horizontal plane (P),

a largest distance between said first compartment internal floor (41, 41s) and said first compartment internal ceiling (43, 43s) being a first internal height (h1),

- said second living compartment (2, 2s) comprising a second compartment internal floor (11, 11s) extending along a plane parallel to said horizontal plane (P),
  said second living compartment (2, 2s) further comprising a second compartment internal ceiling (13, 13s), spaced apart from said second compartment internal floor (11, 11s), as seen in said vertical direction (V),
  a largest distance between said second compartment internal floor (11, 11s) and said second compartment internal ceiling (13, 13s) being a second internal height (h2),

- said first internal height (h1) being smaller than said second internal height (h2),

- said second living compartment (2, 2s) further comprising an upper floor configuration (15, 15s) situated between said second compartment internal floor (11, 11s) and said second compartment internal ceiling (13, 13s) and extending substantially parallel to said second compartment internal floor (11, 11s), thereby forming at least a living area between said upper floor configuration (15, 15s) and said second compartment internal ceiling (13, 13s),

- said first and second living compartments (1, 1s, 2, 2s) being located on opposite sides of a vertical plane (VP) extending in said longitudinal (L) and vertical (V) directions,

characterized in that

said first compartment internal floor (41) of said first living unit (39) is situated at a

higher level, in said vertical direction (V), than said second compartment internal floor (11) of said first living unit (39),
said first compartment internal ceiling (43) of said first living unit (39) is situated at a lower level, in said vertical direction (V), than said second compartment internal ceiling (13) of said first living unit (39),
said second compartment internal ceiling (13) of said first living unit (39) is situated at a higher level, in said vertical direction (V), than a second compartment internal floor (11s) of said second living unit (39s), and further, and
said vertical planes (VP) of said first living unit (39) and said second living unit (39s) respectively are aligned in said vertical direction (V).

15. A living unit assembly (37) according to claim 14, wherein said first compartment internal ceiling (43) of said first living unit (39) and said second compartment internal floor (11s) of said second living unit (39s) form opposing sides of a first portion of a floor configuration unit (45), and
wherein said second compartment internal ceiling (13) of said first living unit (39) and said first compartment internal floor (41s) of said second living unit (39s) form opposing sides of a second portion of said floor configuration unit (45),
said floor configuration unit (45) thereby forming an interface between said first and second living units (39, 39s).

16. A living unit assembly (37) according to any one of claims 14 or 15, wherein said first internal height (h1) is in a range from 2.2 m to 2.8 m and/or said second internal height (h2) is in a range from 3.5 m to 4.2 m.

17. A living unit assembly (37) according to any one of claims 14 to 16, wherein an top internal distance (td) in said vertical direction (V) between said first and second internal ceilings (43, 13) of said living unit (39) and a bottom internal distance (bd) in said vertical direction (V) between said first and second internal floors (41, 11) of said living unit (39) are substantially equal.

18. A living unit assembly (37) according to any one of claims 14 to 17, wherein said first compartment internal floor (41) of said living unit (39) has a first compartment internal floor area (A_{41}), and said second compartment internal floor (11) of said living unit (39) has a second compartment internal floor area (A_{11}), and wherein a floor area of said living unit (39), being the sum of said first compartment internal

floor area (A_{41}) and said second compartment internal floor area (A_{11}), has a value of 50 m^2 or less.

19. A living unit assembly (37) according to any one of claims 14 to 18, wherein said upper floor configuration (15) comprises a first floor structure (23) and a second floor structure (25),
said first floor structure (23) comprising a first living area surface (A1), which first living area surface (A1) faces said second compartment internal ceiling (13), a smallest distance between said first living area surface (A1) and said second compartment internal ceiling (13) being a first top distance (t_1),
said first floor structure (23) further comprising a first bottom surface (27), facing said second compartment internal floor (11), and being situated at a first bottom distance (b_1) from said second compartment internal floor (11) in said vertical direction (V),
said second floor structure (25) comprising a second living area surface (A2), a smallest distance between said second living area surface (A2) and said second compartment internal ceiling (13) being a second top distance (t_2),
said second floor structure (25) further comprising a second bottom surface (29), facing said second compartment internal floor (11), and being situated at a second bottom distance (b_2) from said second compartment internal floor (11) in said vertical direction (V),
and wherein a first ratio (R_1) of said first top distance (t_1) to said first bottom distance (b_1) is within the range of 1.1 to 1.8, and a second ratio (R_2) of said second top distance (t_2) to said second bottom distance (b_2) is within the range of 0.5 to 0.9.

20. A living unit assembly (37) according to claim 19, wherein a minimum distance in said horizontal plane (P) between said first floor structure (23) and said second floor structure (25) is less than 0.5 m.

21. A living unit assembly (37) according to any one of claims 19 or 20, wherein each one of said first top distance (t_1) and said second bottom distance (b_2) is at least 1800 mm.

22. A living unit assembly (37) according to any one of claims 19 to 21, wherein said upper floor configuration (15) comprises a third floor structure (31),

said third floor structure (31) comprising a third living area surface (A3), which third living area surface (A3) faces said second compartment internal ceiling (13),
a smallest distance between said third living area surface (A3) and said second compartment internal ceiling (13) being a third top distance (t_3),
said third floor structure (31) further comprising a third bottom surface (33), facing said second compartment internal floor (11), and being situated at a third bottom distance (t_3) from said second compartment internal floor (11) along said vertical direction (V),
and wherein a third ratio (R_3) of said third top distance (t_3) to said third bottom distance (b_3) being within the range of 1.1 to 1.8 or within the range of 0.5 to 0.9.

23. A living unit assembly (37) according to claim 22, wherein said third ratio (R_3) is within the range of 1.1 to 1.8, and said first floor structure (23) and said third floor structure (31) are horizontally separated by said second floor structure (25).

24. A living unit assembly (37) according to claim 22, wherein said third ratio (R_3) is within the range of 0.5 to 0.9, and said second floor structure (25) and said third floor structure (31) are horizontally separated by said first floor structure (23).

25. A living unit assembly (37) according to any one of claims 22 to 24, wherein said third top distance (t_3) or said third bottom distance (b_3) is at least 1800 mm.

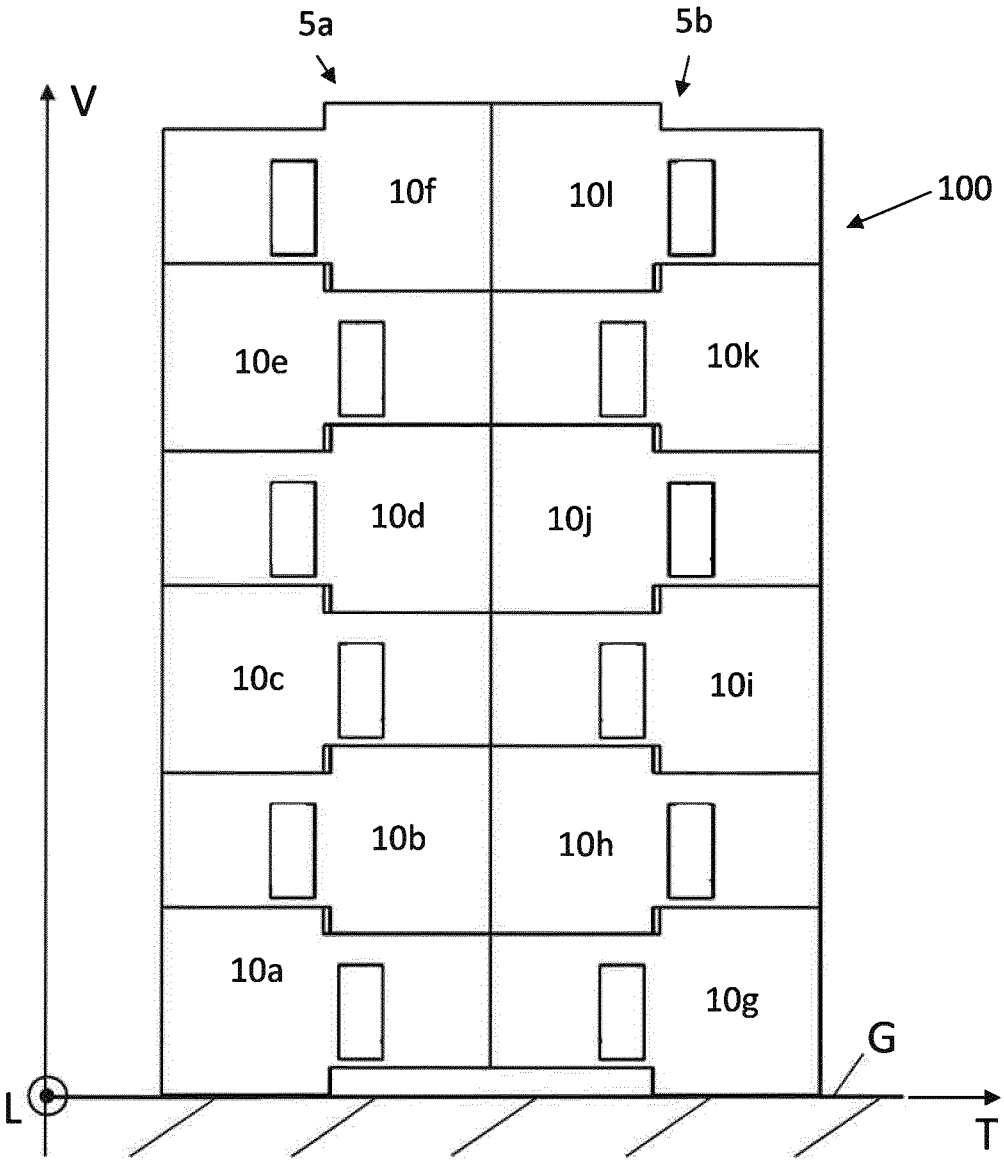

Figure 1

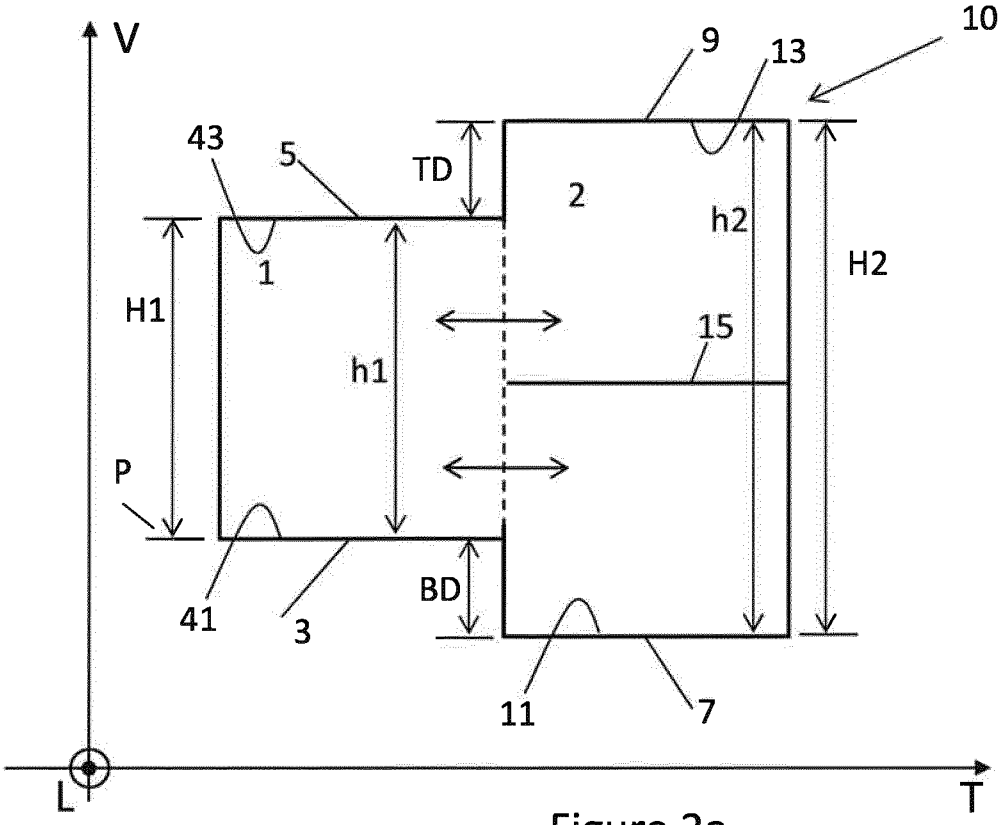

Figure 2a

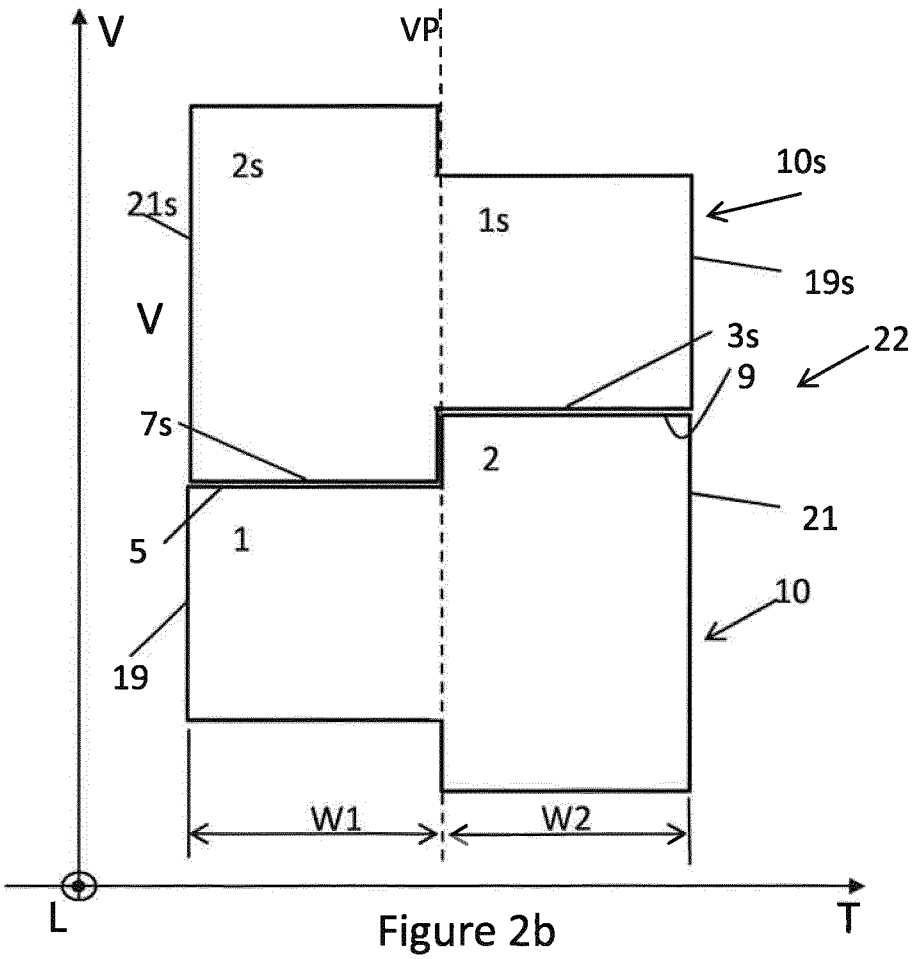

Figure 2b

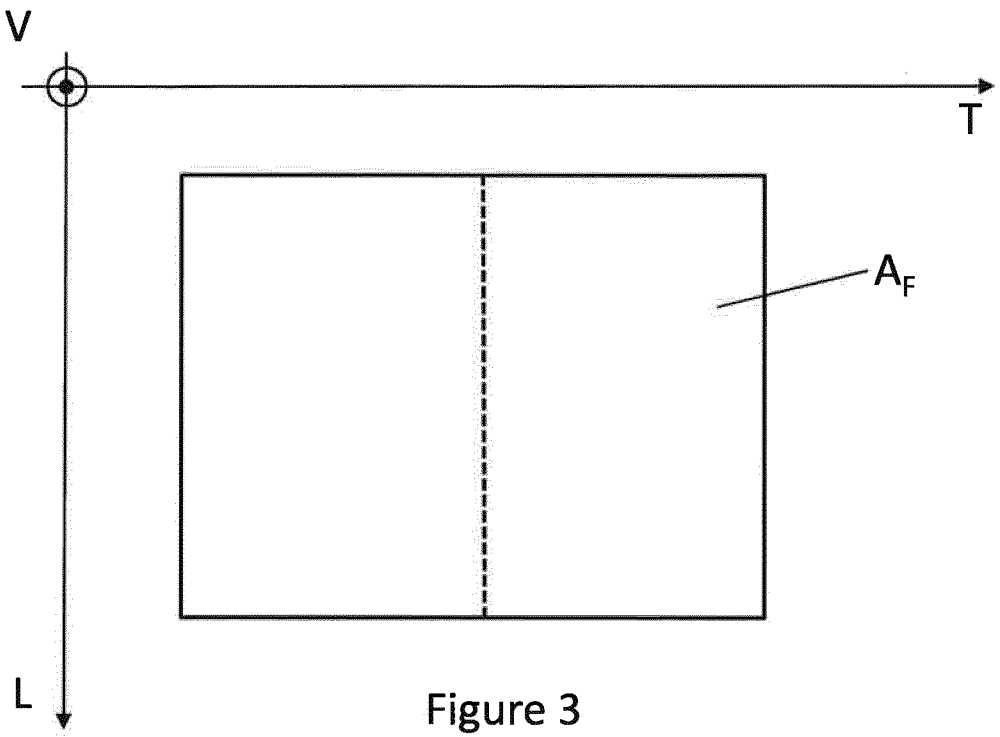

Figure 3

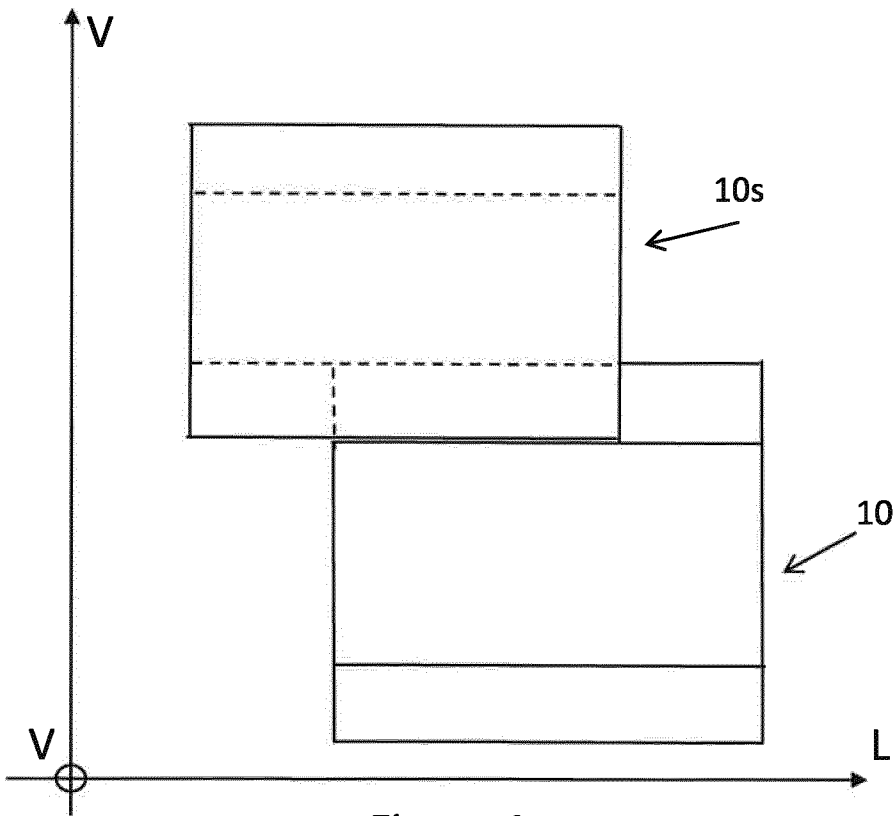

Figure 4

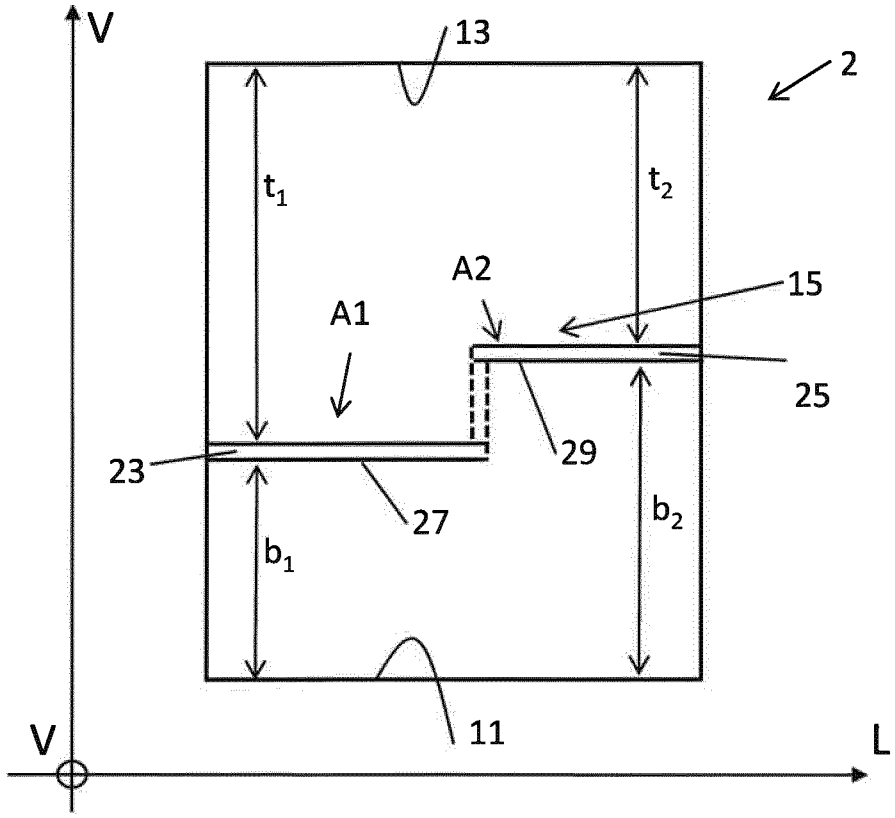

Figure 5

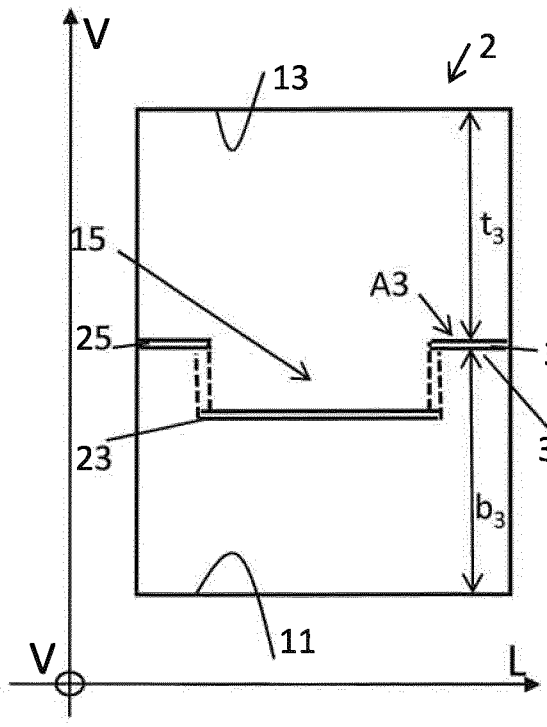

Figure 6a

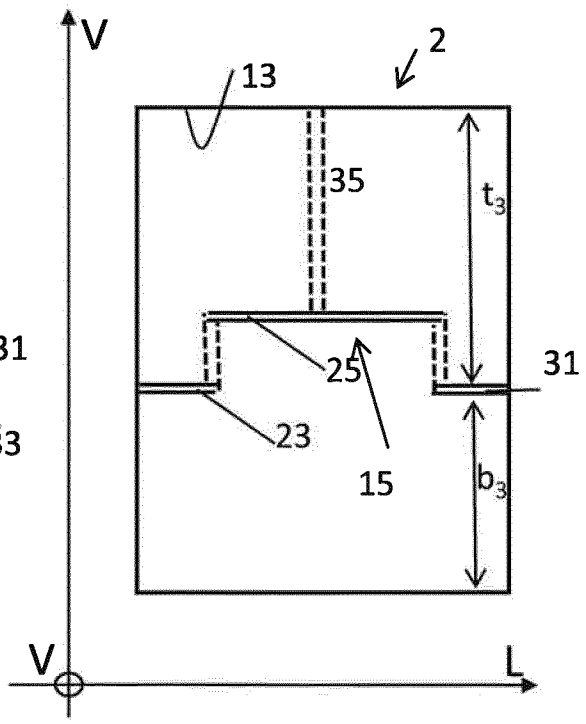

Figure 6b

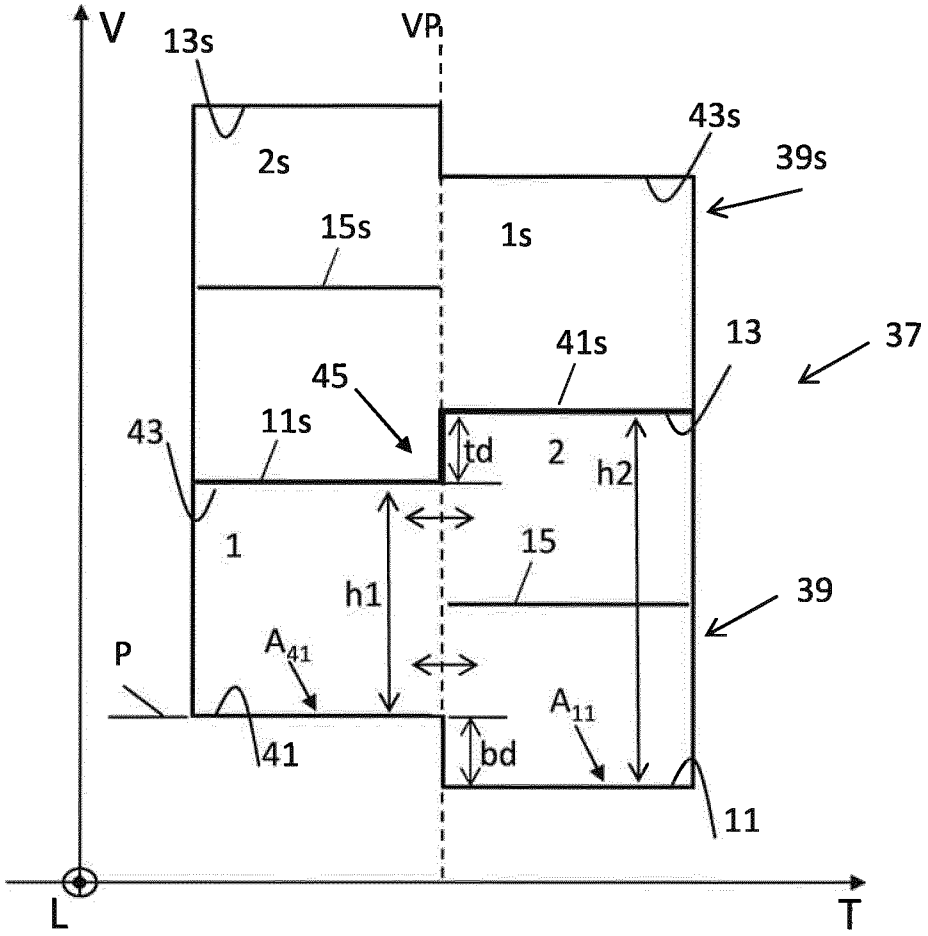
V
13s
VP
43s
39s
2s
15s
1s
41s
13
37
45
43
11s
td
2
h2
1
15
h1
39
P
A41
A11
41
bd
11
L
T

Figure 7

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2019/062352

A. CLASSIFICATION OF SUBJECT MATTER
INV. E04B1/348
ADD. E04B1/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
E04B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 2011 236711 A (TOYOTA HOME KK) 24 November 2011 (2011-11-24)	1-5,13
A	abstract; figure 1 paragraph [0029] - paragraph [0090]; figures 2, 6, 7	6-12

A	GB 2 540 127 A (SOLIDSPACE LTD [GB]) 11 January 2017 (2017-01-11) page 16, line 4 - page 21, line 25; figures 4b, 5e, 6a, 6b	1

A	JP H06 193149 A (SEKISUI CHEMICAL CO LTD) 12 July 1994 (1994-07-12) abstract; figure 1	1

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
23 July 2019	08/10/2019

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Galanti, Flavio

1

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2019/062352

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-13

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-13

   A living module

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2. claims: 14-25

   A living unit assembly

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/EP2019/062352

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 2011236711 A	24-11-2011	JP 5570294 B2	13-08-2014
		JP 2011236711 A	24-11-2011
GB 2540127 A	11-01-2017	NONE	
JP H06193149 A	12-07-1994	NONE	