Claims

What is claimed is:

1. A method for generating an optimized building floor plate layout, the method comprising:

generating, by a floor plate solver module, a set of prioritized two-dimensional zones within a perimeter of a building floor plate based on building dimensions and building envelope scores, wherein the prioritized two-dimensional zones define different functional areas comprising unit zones and one or more vertical transport zone;

generating, by a unit mix solver module, an optimized mix of unit types based on a specified mix of unit types and the prioritized two-dimensional zones, wherein the optimized mix of unit types most closely matches the specified mix of unit types that fit in the prioritized two-dimensional zones, and wherein the optimized mix of unit types identifies which unit types of the optimized mix of unit types are to be placed in which of the prioritized two-dimensional zones; and,

specifying, by a layout solver module, a location within the floor plate layout of each unit type of the optimized mix of unit types based on the optimized mix of unit types.

2. The method of claim 1 wherein the building envelope scores are based on building orientation and view scores.

~~3. The method of claim 1 or claim 2, wherein the unit zones comprise one or more corner zones, one or more primary zones, and one or more secondary zones.~~

~~4. The method of any one of claims 1 to 3 wherein the one or more vertical zones comprise stairs and/or elevators.~~

~~5. The method of any one of claims 1 to 4 wherein the unit types comprise three bedroom units, two bedroom units, one bedroom units and studio units.~~

~~6. The method of any one of claims 1 to 5 wherein each of the unit types is predefined to have a depth, a minimum width and a maximum width.~~

~~7. The method of any one of claims 1 to 6 wherein generating the optimized mix of unit types based on the specified mix of unit types and the prioritized two-dimensional zones comprises:~~

~~(i) adding units, one per unit type, to the unit zones based on priority of the prioritized two-dimensional zones and the specified mix of unit types to create a current unit mix;~~

~~(ii) calculating a delta between the specified mix of unit types and the current unit mix;~~

~~(iii) selecting one unit of whichever unit type has a largest calculated delta from the calculated delta between the specified unit mix of unit types and the current unit mix;~~

~~(iv) adding the selected one unit type having the largest calculated delta to the current unit mix based on the prioritized two-dimensional zones; and,~~

~~(v) repeating steps (ii) through (iv) for any remaining room for another unit in any of the prioritized two-dimensional zones.~~

~~8. The method of claim 7 further comprising allocating any remaining space in the prioritized two-dimensional zones to one or more of the unit types added to the prioritized two-dimensional zones.~~

~~9. The method of any one of claims 1 to 8 further comprising duplicating and stacking the generated optimized building floor plate layout to create more than one story for the building.~~

~~10. The method of any one of claims 1 to 9 further comprising receiving a different specified mix of unit types and repeating the steps of generating the optimized mix of unit types and specifying the location of each unit type without repeating generating the prioritized two-dimensional zones.~~

~~11. A system for generating an optimized building floor plate layout, the system comprising:~~

~~a floor plate solver module configured to generate a set of prioritized two-dimensional zones within a perimeter of a building floor plate based on building dimensions and building envelope scores, wherein the prioritized two-dimensional zones define different functional areas comprising unit zones and one or more vertical transport zone;~~

~~a unit mix solver module configured to generate an optimized mix of unit types based on a specified mix of unit types and the prioritized two-dimensional zones, wherein the optimized mix of unit types most closely matches the specified mix of unit types that fit in the prioritized two-dimensional zones, and wherein the optimized mix of unit types identifies which unit types of the optimized mix of unit types are to be placed in which of the prioritized two-dimensional zones; and,~~

~~a layout solver module configured to specify a location within the floor plate layout of each unit type of the optimized mix of unit types based on the optimized mix of unit types.~~

~~12. The system of claim 11 wherein the building envelope scores are based on building orientation and view scores.~~

~~13. The system of claim 11 or claim 12 wherein the unit zones comprise one or more corner zones, one or more primary zones, and one or more secondary zones.~~

~~14. The system of any one of claims 11 to 13 wherein the one or more vertical zones comprise stairs and/or elevators.~~

~~15. The system of any one of claims 11 to 14 wherein the unit types comprise three bedroom units, two bedroom units, one bedroom units and studio units.~~

~~16. The system of any one of claims 11 to 15 wherein each of the unit types is predefined to have a depth, a minimum width and a maximum width.~~

~~17. The system of any one of claims 11 to 16 wherein the unit mix solver configured to generate the optimized mix of unit types based on the specified mix of unit types and the prioritized two-dimensional zones is configured to:~~

~~(i) add units, one per unit type, to the unit zones based on priority of the prioritized two-dimensional zones and the specified mix of unit types to create a current unit mix;~~

~~(ii) calculate a delta between the specified mix of unit types and the current unit mix;~~

~~(iii) select one unit of whichever unit type has a largest calculated delta from the calculated delta between the specified unit mix of unit types and the current unit mix;~~

~~(iv) add the selected one unit type having the largest calculated delta to the current unit mix based on the prioritized two-dimensional zones; and,~~

~~(v) repeat steps (ii) through (iv) for remaining room for another unit in any of the prioritized two-dimensional zones.~~

~~18. The system of claim 17 wherein the unit mix solver is further configured to allocate any remaining space in the prioritized two-dimensional zones to one or more of the unit types added to the prioritized two-dimensional zones.~~

~~19. The system of any one of claims 11 to 18 further configured to duplicate and stack the generated optimized building floor plate layout to create more than one story for the building.~~

~~20. The system of any one of claims 11 to 19 wherein the system is further configured to receive a different specified mix of unit types and repeat generating the optimized mix of unit types and specifying the location of each unit type without repeating generating the prioritized two-dimensional zones.~~

1. A method for generating an optimized building floor plate layout, the method comprising:

generating, by a floor plate solver module, a set of prioritized two-dimensional zones within a perimeter of a building floor plate based on building dimensions and building envelope scores, wherein the prioritized two-dimensional zones define different functional areas comprising unit zones and one or more vertical transport zone;

generating, by a unit mix solver module, an optimized mix of unit types based on a specified mix of unit types and the prioritized two-dimensional zones, wherein the optimized mix of unit types most closely matches the specified mix of unit types that fit in the prioritized two-dimensional zones, and wherein the optimized mix of unit types identifies which unit types of the optimized mix of unit types are to be placed in which of the prioritized two-dimensional zones; and,

specifying, by a layout solver module, a location within the floor plate layout of each unit type of the optimized mix of unit types based on the optimized mix of unit types.

2. The method of claim 1 wherein the building envelope scores are based on building orientation and view scores.

3. The method of claim 1 wherein the unit zones comprise one or more corner zones, one or more primary zones, and one or more secondary zones.

4. The method of claim 1 wherein the one or more vertical zones comprise stairs and/or elevators.

5. The method of claim 1 wherein the unit types comprise three bedroom units, two bedroom units, one bedroom units and studio units.

6. The method of claim 1 wherein each of the unit types is predefined to have a depth, a minimum width and a maximum width.

7. The method of claim 1 wherein generating the optimized mix of unit types based on the specified mix of unit types and the prioritized two-dimensional zones comprises:

(i) adding units, one per unit type, to the unit zones based on priority of the prioritized two-dimensional zones and the specified mix of unit types to create a current unit mix;

(ii) calculating a delta between the specified mix of unit types and the current unit mix;

(iii) selecting one unit of whichever unit type has a largest calculated delta from the calculated delta between the specified unit mix of unit types and the current unit mix;

(iv) adding the selected one unit type having the largest calculated delta to the current unit mix based on the prioritized two-dimensional zones; and,

(v) repeating steps (ii) through (iv) for any remaining room for another unit in any of the prioritized two-dimensional zones.

8. The method of claim 7 further comprising allocating any remaining space in the prioritized two-dimensional zones to one or more of the unit types added to the prioritized two-dimensional zones.

9. The method of claim 1 further comprising duplicating and stacking the generated optimized building floor plate layout to create more than one story for the building.

10. The method of claim 1 further comprising receiving a different specified mix of unit types and repeating the steps of generating the optimized mix of unit types and specifying the location of each unit type without repeating generating the prioritized two-dimensional zones.