Amended Claims

1. A modular integrated building, comprising a plurality of prefabricated room units (1) assembled together, each prefabricated room unit (1) being prefabricated integrally with a top plate (11), a bottom plate (12) and a wall body (13), with all or part of the prefabricated room units (1) being further prefabricated integrally with a load-bearing structural wall or column,

wherein a top of each prefabricated room unit (1) is provided with reserved, exposed reinforcing bars, and a bottom of the load-bearing structural wall or column of the prefabricated room unit (1) is provided with a semi-prefabricated connecting port (2);

wherein the semi-prefabricated connecting port (2) extends to a bottom surface and a side wall of the prefabricated room unit (1), and is provided with reserved, exposed reinforcing bars therein, so that reserved, exposed reinforcing bars arranged at a top of the prefabricated room unit (1) of a next floor are inserted in the semi-prefabricated connecting port (2) and thus connected with the reserved, exposed reinforcing bars arranged therein, the prefabricated room units (1) of two adjacent floors being connected with each other through in-situ casting concrete in the semi-prefabricated connecting port (2);

wherein a cast-in-situ concrete interlayer (3) is arranged between the bottom plate (12) of the prefabricated room unit (1) of a floor and the top plate (11) of the prefabricated room unit (1) of a next floor, for connecting adjacent prefabricated room units (1) of a same floor together, and reinforcing bars of the cast-in-situ concrete interlayer (3) are connected with the reserved, exposed reinforcing bars arranged at the top of the prefabricated room unit (1) of the next floor; and

wherein an opening of the semi-prefabricated connecting port (2) is provided on an outer side wall of the prefabricated room unit (1), with a teeth-shaped engaging surface formed on an inner wall of the opening.

2. The modular integrated building according to claim 1, characterized in that the reserved, exposed reinforcing bars arranged in the semi-prefabricated connecting port (2) include vertical reinforcing bars and lateral stirrups, and the reserved, exposed reinforcing bars arranged at the top of the prefabricated room unit (1) include vertical reinforcing bars and horizontal reinforcing bars.

3. The modular integrated building according to claim 1, characterized in that concrete of the prefabricated room unit (1) occupies at least 80% of concrete of the whole building by volume.

4. The modular integrated building according to claim 1, characterized in that the prefabricated room unit (1) is embedded therein with water pipelines and electrical conduits, and has a decoration layer on its surface.

5. The modular integrated building according to claim 1, characterized in that the prefabricated room unit (1) is provided at an edge of its top with a rim (16) extending upwardly.

6. The modular integrated building according to claim 1, characterized in that a vertical sealing strip (41) is arranged between two adjacent prefabricated room units (1) of a same floor, and a horizontal sealing strip (42) is arranged between two prefabricated room units (1) of adjacent floors.

7. The modular integrated building according to claim 1, characterized in that between the bottom plate (12) of the prefabricated room unit (1) of a floor and the top plate (11) of the prefabricated room unit (1) of a next floor are arranged a plurality of bearing plates (5), and a cement mortar layer (6) having a same height as the load-bearing plates (5).

8. The modular integrated building according to claim 1, characterized in that the top plate (11) of the prefabricated room unit (1) has a thickness in a range of 60-90 mm, the bottom plate (12) has a thickness in a range of 60-90 mm, and the cast-in-situ concrete interlayer (3) has a thickness in a range of 90-140 mm.

9. A construction method for the modular integrated building according to claim 1, comprising:

step A, mounting the prefabricated room unit (1) including the load-bearing structural wall or column on the top of the lower structure of the building that has been formed, so that the reserved, exposed reinforcing bars arranged at the top of the lower structure of the building are inserted into the semi-prefabricated connecting port (2) arranged at the bottom of the prefabricated room unit (1);

step B, binding the reserved, exposed reinforcing bars in the semi-prefabricated connecting port (2) with the reserved, exposed reinforcing bars arranged at the top of the lower structure of the building;

step C, establishing a template at the semi-prefabricated connecting port (2) and pouring concrete;

step D, binding reinforcing bars at the top of the prefabricated room unit (1), and connect them with the reserved, exposed reinforcing bars arranged at the top of the prefabricated room unit (1); and

step E, pouring concrete at the top of the prefabricated room unit (1) with which reinforcing bars have been bound.

10. The construction method for the modular integrated building according to claim 9, characterized in that prior to step D, the prefabricated room unit (1) with no load-bearing structural wall or column is mounted on the top of the lower structure of the building.

11. The construction method for the modular integrated building according to

claim 9, characterized in that prior to mounting the prefabricated room unit (1), a plurality of bearing plates (5) is placed on the top of the lower structure of the building and a cement mortar layer (6) is provided.

12. The construction method for the modular integrated building according to claim 9, characterized in that before the prefabricated room unit (1) is mounted, a horizontal sealing strip (42) is arranged on the top of the prefabricated room unit (1) of an upper floor, and

when the prefabricated room unit (1) is mounted, a vertical sealing strip (41) is arranged between two adjacent prefabricated room units (1) of a same floor.

13. The construction method for the modular integrated building according to claim 9, characterized in that prior to step D, vertical supporting columns (9) are mounted in the prefabricated room unit (1) of a current floor, for supporting the top plate (11) of said prefabricated room unit (1).