

A multi-storey building with prefabricated members and a semi-prefabricating construction method thereof

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Technical Field

The invention relates to a multi-storey building and a construction method thereof,
more specifically to a multi-storey building with prefabricated members and a
10 semi-prefabricating construction method thereof.

Background

In prior arts, the conventional construction method for a multi-storey building
15 typically includes: 1) firstly establishing a reinforcement mat for load-bearing wall
and column, then mounting a formwork around the reinforcement mat, and afterwards
pouring concrete into the formwork, thus forming the load-bearing wall and column; 2)
mounting a formwork for floor plate and supporting beam, together with the
supporting brackets, then laying reinforcing steel bars for the plate and beam in the
20 formwork, and afterwards pouring concrete into the formwork, thus producing the
floor plate and beam; 3) removing the supporting brackets for the floor plate in the
next floor, and completing construction of the upper floor according to the
above-mentioned steps.

25 The conventional construction method has the defects of a long construction period
and a high construction cost due to storey-to-storey and plate-by-plate construction. In
addition, there will be problems of serious noise and dust pollution at the construction
site. Also, it cannot ensure the construction procedure has a unified quality standard.

30 To this end, a multi-storey building with prefabricated members is proposed, such as
that disclosed in Chinese patent ZL97125767.1. The building as disclosed in the
patent is comprised of prefabricated outer walls and semi-prefabricated floor plate
units. In this way, the in-situ construction work load can be reduced and the
construction period can be shortened, and standardization of construction can be
35 achieved. However, even with this method, constructing the bathroom, kitchen and
staircase in each apartment of the building still needs a heavy work load, and thus the
construction period thereof is still unsatisfactory.

Summary

To solve the defects existing in the prior arts, the invention aims to provide a multi-storey building and its construction method, with which a shortened
5 construction period and a unified quality standard can be achieved.

The invention provides a multi-storey building with prefabricated members, which includes: a prefabricated outer wall, a cast-in-situ wall, a semi-prefabricated floor plate and a cast-in-situ floor plate. The building further includes a prefabricated
10 staircase, a prefabricated bathroom and a prefabricated kitchen. Each of the upper and lower ends of the prefabricated staircase is provided with a mounting hole for pouring sand slurry. The floor plate connecting the upper and lower ends of the prefabricated staircase is securingly provided with exposed reinforcing steel bars, which can be inserted into the corresponding mounting hole and secured there through pouring sand
15 slurry. At the bottoms of the prefabricated bathroom and the prefabricated kitchen there are pre-buried horizontal exposed reinforcing steel bars, which are connected to the reinforcing steel bars in the cast-in-situ floor plate with each other.

A bridging portion is extended outwardly from each of the upper and lower ends of
20 the prefabricated staircase. The mounting holes for pouring sand slurry are arranged on the bridging portions. The end of the floor plate connecting with the upper and lower ends of the prefabricated staircase is provided with a recess for receiving the bridging portion. The exposed reinforcing steel bars are securingly arranged on the top of the recess.

25 At least one wall unit of the prefabricated bathroom or the prefabricated kitchen is a semi-prefabricated wall having a rough outer surface with concave and convex portions alternatively arranged. The wall unit is combined into one piece with the cast-in-situ wall at the same floor.

30 Alternatively, at least one wall unit of the prefabricated bathroom is a full-prefabricated wall, and is provided with a first grouting channel in the lower part of the wall and a grouting hole communicating with the first grouting channel and arranged on the wall surface. The first grouting channel abuts alignment with a second
35 grouting channel arranged on the adjacent wall of the next floor. The first grouting channel and the second grouting channel are inserted with inner reinforcing steel bars, which are secured therein by means of pouring sand slurry.

Alternatively, at least one wall unit of the prefabricated kitchen is a full-prefabricated wall, and is provided with a third grouting channel in the lower part of the wall and a grouting hole communicating with the third grouting channel and arranged on the wall surface. The third grouting channel abuts alignment with a fourth grouting channel arranged on the adjacent wall of the next floor. The third grouting channel and the fourth grouting channel are inserted with inner reinforcing steel bars, which are secured therein by means of pouring sand slurry.

The semi-prefabricating construction method for a multi-storey building comprises the following steps:

Step A: Laying a semi-prefabricated floor plate and putting reinforcing steel bars on the semi-prefabricated floor plate;

Step B: Placing and fixing a prefabricated outer wall, a prefabricated bathroom and a prefabricated kitchen, binding reinforcing steel bars of the load-bearing cross wall and the column, and then fixing the formwork;

Step C: Forming the load-bearing cross wall and the column by pouring concrete into the formwork, and forming the floor plate through casting concrete on the semi-prefabricated floor plate with reinforcing steel bars;

Step D: Placing and fixing the prefabricated staircase, finishing the installation of the prefabricated staircase, and removing the formwork of the load-bearing cross wall and the column.

In each of the steps, concrete is pumped to the working floor by means of a high pressure pump from a concrete mixer, which is located on the bottom surface of the working floor.

The above Steps A, B, C or D are performed across different side wings of a building within one day.

In Step B, the horizontal exposed reinforcing steel bars pre-buried at the bottoms of the prefabricated bathroom and the prefabricated kitchen are connected with the reinforcing steel bars arranged on the semi-prefabricated floor plate. In Step C, at least one wall unit of the prefabricated bathroom is securely connected with the adjacent wall, and at least one wall unit of the prefabricated kitchen is securely connected

with the adjacent wall.

The at least one wall unit of the prefabricated bathroom or the prefabricated kitchen is a semi-prefabricated wall. In Step C, the semi-prefabricated wall of the prefabricated bathroom or the prefabricated kitchen is connected with the cast-in-situ wall at the same floor into one piece.

Alternatively, the at least one wall unit of the prefabricated bathroom or the prefabricated kitchen is a full-prefabricated wall, and is provided with a connecting hole in the lower part of the wall and a grouting hole communicating with the connecting hole and arranged on the wall surface. The connecting hole abuts in alignment with the connecting hole arranged in the adjacent wall of the next floor. In Step C, through inserting inner reinforcing steel bars and then pouring sand slurry in the connecting hole of the prefabricated bathroom or the prefabricated kitchen and the corresponding connecting hole in the adjacent wall of the next floor, the walls in two adjacent upper and lower floors can be secured together.

In Step D, the exposed reinforcing steel bars pre-buried in the floor plate connecting the upper and lower ends of the prefabricated staircase are inserted in the mounting hole arranged in the upper and lower ends of the prefabricated staircase. The prefabricated staircase and the floor plate are securingly connected with each other through pouring sand slurry in the mounting hole.

Compared with the prior arts, the multi-storey building with prefabricated members and the semi-prefabricating construction method thereof according to the invention provides the following advantageous technical effects. In addition to semi-prefabricated floor plates and the prefabricated outer walls, the prefabricated bathroom, the prefabricated kitchen and the prefabricated staircase are also used. Therefore, the work load in connection with cast-in-situ structures is reduced, thus significantly shortening the construction period. Also, the construction quality standard is unified to a more extent. Moreover, the construction materials are hoisted to the working floor by means of a tower crane, while the concrete needed is pumped to the working floor by means of a concrete pump. And all the construction steps can be performed across different side wings of a building within one day, thus minimizing the idle time for labor. In this way, the construction efficiency is greatly enhanced, and a standard floor can be built within four working days.

Brief Description of Drawings

Fig. 1 schematically shows the structure of the multi-storey building with prefabricated members according to the invention.

5 Fig. 2 schematically shows the structure of the prefabricated staircase.

Fig. 3 schematically shows the installation of the prefabricated staircase.

10 Fig. 4 is the enlarged view of the area connecting the prefabricated staircase and the floor plate.

Fig. 5 is a perspective view schematically showing the structure of the prefabricated bathroom.

15 Fig. 6 schematically shows the structure connecting the horizontal reinforcing steel bars pre-buried at the bottom of the prefabricated bathroom and the floor plate reinforcing steel bars.

20 Fig. 7 schematically shows the structure of the surface of the semi-prefabricated wall unit of the prefabricated bathroom.

Fig. 8 schematically shows the connection of the outer reinforcement mat of the semi-prefabricated wall unit of the prefabricated bathroom.

25 Fig. 9 schematically shows the connection of the semi-prefabricated wall unit of the prefabricated bathroom and the cast-in-situ wall.

Fig. 10 schematically shows the structure connecting the full-prefabricated wall unit of the prefabricated bathroom and the adjacent wall in the next floor.

30 Fig. 11 is the perspective view schematically showing the structure of the prefabricated kitchen.

35 Fig. 12 schematically shows the structure connecting the horizontal reinforcing steel bars pre-buried at the bottom of the prefabricated kitchen and the floor plate reinforcing steel bars.

Fig. 13 schematically shows the structure of the surface of the semi-prefabricated wall

unit of the prefabricated kitchen.

Fig. 14 schematically shows the connection of the outer reinforcement mat of the semi-prefabricated wall unit of the prefabricated kitchen.

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Fig. 15 schematically shows the connection of the semi-prefabricated wall unit of the prefabricated kitchen and the in-situ cast walls.

Fig. 16 schematically shows the structure connecting the full-prefabricated wall unit of the prefabricated kitchen and the adjacent wall in the next floor.

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Fig. 17 schematically shows the structure of the multi-storey building before the four-day construction period.

15 Fig. 18 schematically shows the construction region in the first day.

Fig. 19 schematically shows the construction region in the second day.

Fig. 18 schematically shows the construction region in the third day.

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Fig. 18 schematically shows the construction region in the fourth day.

Specific Embodiments of the Invention

25 In the following the invention will be discussed in details with reference to the attached drawings and embodiments.

The multi-storey building with prefabricating members according to the invention mainly includes walls, floor plates, staircases, load supporting columns and beams. As shown in Fig. 1, the wall consists of a prefabricated outer wall 1 and a cast-in-situ wall 2. The right and left ends of the prefabricated outer wall 1 are provided with exposed reinforcing steel bars that are arranged in advance, and thus the prefabricated outer wall 1 is connected into one piece with the cast-in-situ wall 2. The floor plate 3 consists of a semi-fabricated floor plate 31 and a cast-in-situ floor plate 32, which is formed by laying reinforcing steel bars on the semi-fabricated floor plate 31 and casting concrete accordingly. The invention is characterized in that, the staircase is a prefabricated staircase 6, and a fabricated bathroom 7 and a fabricated kitchen 8 are used also. In this manner, the work load of in-situ construction can be significantly

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reduced, thus facilitating a unified construction standard.

As shown in Figs. 2, 3 and 4, the prefabricated staircase 6 is a section of staircase located between the floor plate 3 and the half level platform. That is to say, the staircase of a standard floor consists of two prefabricated staircases 6, on which a handrail 63 and anti-slip strips located on the steps are both arranged thereon in advance. A bridging portion 62 is outwardly extended from each of the upper and lower ends of the prefabricated staircase 6, and is provided with two mounting holes 61 for pouring sand slurry therein. The end of the cast-in-situ floor plate 32 connecting with the upper and lower ends of the fabricated staircase 6 is provided with a recess 33 for receiving the bridging portion 62. On the top portion of each recess 33, at positions corresponding to those of the mounting holes 61, there are provided exposed reinforcing steel bars 34, which can be inserted into corresponding mounting holes 61 and securingly connected the prefabricated staircase 6 with the cast-in-situ floor plate 32 by means of pouring sand slurry.

The walls, ceiling and bottom plate of the prefabricated bathroom 7 are prefabricated in factories. A window is arranged on the wall. The wall is further provided with water supply/drainage pipes, wiring pipes and a lighting control box, which are all pre-buried therein, together with sanitary equipments also. As shown in Figs. 5 and 6, at the bottom of the prefabricated bathroom 7 there are provided with horizontal, exposed reinforcing steel bars 74 for connection with the reinforcing steel bars 321 of the adjacent cast-in-situ floor plate 32. On one of the outer wall surfaces of the prefabricated bathroom 7 there are further provided with temporary securing nuts 75, which can be temporarily connected with the wall surfaces of the adjacent floor through a connecting member 76 during installation of the prefabricated bathroom. The temporary securing nuts 75 and the connecting member 76 can be removed after the prefabricated bathroom 7 is securingly connected to the structural wall of the same floor or the next floor.

To secure the prefabricated bathroom 7 more reliably, the walls of the prefabricated bathroom 7 should be connected to adjacent structural walls. To this end, two kinds of connecting ways can be adopted.

For one thing, as shown in Figs. 7, 8 and 9, at least one wall unit of the prefabricated bathroom 7 is a semi-prefabricated wall 70 having a rough outer surface with concave and convex portions alternatively arranged. Outside the semi-prefabricated wall 70 reinforcing steel bars 21 and 22 are bound and concrete are cast, so that a cast-in-situ

wall 2 is formed. Therefore, the semi-prefabricated wall 70 can be combined into one piece with the cast-in-situ wall 2 at the same floor.

For the other, as shown in Fig. 10, at least one wall unit of the prefabricated bathroom 7 is a full-prefabricated wall 70, and is provided with a first grouting channel 71 in the lower part of the structural wall and a grouting hole 73 communicating with the first grouting channel 71 and arranged on the wall surface. The first grouting channel 71 abuts alignment with a second grouting channel 72 arranged on the adjacent structural wall of the next floor. The first grouting channel 71 and the second grouting channel 72 are inserted with inner reinforcing steel bars 77, thus securingly connecting the full-prefabricated wall 70 and the structural wall of the next floor into one piece by means of pouring sand slurry.

The walls, ceiling and bottom plate of the prefabricated kitchen 8 are prefabricated in factories. A window is arranged on the wall. The wall is further provided with water supply/drainage pipes, wiring pipes and a lighting control box, which are all pre-buried therein, together with hearth and dish sink. As shown in Figs. 11 and 12, at the bottom of the prefabricated kitchen 8 there are provided with horizontal, exposed reinforcing steel bars 84 for connection with the reinforcing steel bars 321 of the adjacent cast-in-situ floor plate 32. On one of the outer wall surfaces of the prefabricated kitchen 8 there are further provided with temporary securing nuts 85, which can be temporarily connected with the wall surfaces of the adjacent floor through a connecting member 86 during installation of the prefabricated kitchen 8. The temporary securing nuts 85 and the connecting member 86 can be removed after the prefabricated kitchen 8 is securingly connected to the structural wall of the same floor or the next floor.

To secure the prefabricated kitchen 8 more reliably, the walls of the prefabricated kitchen 8 should be connected to adjacent structural walls. To this end, two kinds of connecting ways can be adopted.

For one thing, as shown in Figs. 11 to 15, at least one wall unit of the prefabricated kitchen 8 is a semi-prefabricated wall 80 having a rough outer surface with concave and convex portions alternatively arranged. Outside the semi-prefabricated wall 80 reinforcing steel bars 21 and 22 are bound and concrete are cast, so that a cast-in-situ wall 2 is formed. Therefore, the semi-prefabricated wall 80 can be combined into one piece with the cast-in-situ wall 2 at the same floor.

For the other, as shown in Fig. 10, at least one wall unit of the prefabricated kitchen 8 is a full-prefabricated wall 80, and is provided with a third grouting channel 81 in the lower part of the wall and a grouting hole 83 communicating with the third grouting channel 81 and arranged on the wall surface. The third grouting channel 81 abuts alignment with a fourth grouting channel 82 arranged on the structural wall of the adjacent next floor. The third grouting channel 81 and the fourth grouting channel 82 are inserted with inner reinforcing steel bars, thus securingly connecting the full-prefabricated wall 80 and the structural wall of the next floor into one piece by means of pouring sand slurry.

Fig. 17 schematically shows the structure of a floor already built. The semi-prefabricating construction method for a multi-storey building according to the invention is provided to construct a standard floor based on the built floor, and comprises the following steps:

Step A: Hoisting the semi-prefabricated floor plate 31 in position by means of a crane and laying it down and fixing it, and then putting reinforcing steel bars 321 on the semi-prefabricated floor plate 31, as shown in Fig. 18;

Step B: Placing and fixing the prefabricated outer wall 1, the prefabricated bathroom 7 and the prefabricated kitchen 8, combining the horizontal exposed reinforcing steel bars 74, 84 pre-buried at the bottoms of the prefabricated bathroom 7 and the prefabricated kitchen 8 with the reinforcing steel bars 321 arranged on the semi-prefabricated floor plate 31, and then binding the reinforcing steel bars of the load-bearing cross wall 2 and the column 5 and fixing the formwork, as shown in Fig. 19;

Step C: Forming the load-bearing cross wall 2 and the column 5 by pouring concrete into the formwork, and, with the semi-prefabricated floor plate 31 as the formwork, forming the cast-in-situ floor plate 3 through casting concrete on the semi-prefabricated floor plate 31 with reinforcing steel bars, thus obtaining the cast-in-situ floor plate 32, as shown in Fig. 20;

Step D: Hoisting the prefabricated staircase 6 in between the recesses 33 of two adjacent floor plates 32, inserting the exposed reinforcing steel bars 34 on the recesses 33 into the mounting holes 61 on the bridging portions 63 one both ends of the prefabricated staircase 6, pouring sand slurry into the mounting holes 61 so as to securingly connect the prefabricated staircase 6 with the two adjacent floor plates 32,

thus finishing the installation of the prefabricated staircase 6; at this phase, the strength of the cast-in-situ load-bearing cross wall 2 and the cast-in-situ floor plate 32 can meet the requirement of related provisions, and therefore the formwork of the load-bearing cross wall 2 and the column 5 can be removed, as shown in Fig. 21.

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In the above Step C, it is necessary to securely connect at least one wall unit of the prefabricated bathroom 7 and the prefabricated kitchen 8 with the adjacent structural wall. The above-mentioned wall unit for connection could be a semi-prefabricated wall or a full-prefabricated wall.

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When the wall unit of the prefabricated bathroom 7 or the prefabricated kitchen 8 for connection with the adjacent structural wall is a semi-prefabricated wall, a reinforcement mat is bound outside the semi-prefabricated wall. Concrete is cast after the reinforcing steel bars 21 in the next floor are connected to the reinforcing steel bars 22 in the working floor, so that the semi-prefabricated wall of the prefabricated bathroom 7 or the prefabricated kitchen 8 can be securely connected with the cast-in-situ wall 2 of the same floor into one piece.

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When the wall unit of the prefabricated bathroom 7 or the prefabricated kitchen 8 for connection with the adjacent structural wall is a full-prefabricated wall, the wall unit is provided with a connecting hole in the lower part of the wall and a grouting hole communicating with the connecting hole and arranged on the wall surface. The connecting hole abuts in alignment with the connecting hole arranged in the wall of the adjacent next floor. Through inserting inner reinforcing steel bars and pouring sand slurry in the connecting hole of the prefabricated bathroom 7 or the prefabricated kitchen 8 and the corresponding connecting hole in the wall of the adjacent next floor, the walls of two adjacent floors can be secured together.

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In the above steps, concrete is pumped to the working floor from a concrete mixer by means of a high pressure pump. The concrete mixer is located on the bottom surface of the working floor, so that the hoister could be used to convey other materials to the working floor. Therefore, the working efficiency is increased. On the working floor a hydraulic arm is erected, by the side of which concrete is cast so as to form the floor plate and the structural cross wall. The hydraulic arm per se is placed on a portable steel cylinder device, which is supported on several floors and can be relocated according to the construction schedule. In order to use the concrete pump, it is necessary to change the concrete slump from the standard 75 mm to 100 mm. This is achieved through enabling the concrete mixture with cement of high content, so that

the concrete can maintain its strength but still be easily to be pumped to the working floor.

5 The above Steps A, B, C or D can be performed across different side wings of a building within one day. Therefore, it needs only four working days to build a standard floor. Compared with the conventional construction method, the construction period is significantly reduced, and the idle time of labor is minimized.

10 In the foregoing preferred embodiments, not limiting the scope of the invention, are discussed. It is evident that many alternatives and variations will be apparent to those skilled in the art. Various modifications, changes and improvements may be made without departing from the spirit and scope of the invention as defined in the following claims.

Claims

1. A multi-storey building with prefabricated members, including a prefabricated outer wall (1), a cast-in-situ wall (2), a semi-prefabricated floor plate (31) and a cast-in-situ floor plate (32), characterized in that it further comprises:

a prefabricated staircase (6), a prefabricated bathroom (7) and a prefabricated kitchen (8);

each of the upper and lower ends of the prefabricated staircase (6) is provided with a mounting hole (61) for pouring sand slurry, and the floor plate connecting the upper and lower ends of the prefabricated staircase (6) is securingly provided with exposed reinforcing steel bars, which can be inserted into the corresponding mounting hole (61) and secured there through pouring sand slurry; and

at the bottoms of the prefabricated bathroom (7) and the prefabricated kitchen (8) there are pre-buried horizontal exposed reinforcing steel bars, which are connected to the reinforcing steel bars in the cast-in-situ floor plate (32) with each other.

2. The multi-storey building with prefabricated members according to claim 1, characterized in that, a bridging portion (62) is extended outwardly from each of the upper and lower ends of the prefabricated staircase (6), and the mounting holes for pouring sand slurry are arranged on the bridging portion (62);

the end of the floor plate connecting with the upper and lower ends of the prefabricated staircase (6) is provided with a recess (33) for receiving the bridging portion (62), and the exposed reinforcing steel bars are securingly arranged on the top of the recess (62).

3. The multi-storey building with prefabricated members according to claim 1 or 2, characterized in that, at least one wall unit of the prefabricated bathroom (7) or the prefabricated kitchen (8) is a semi-prefabricated wall having a rough outer surface with concave and convex portions alternatively arranged, and said wall unit is combined into one piece with the cast-in-situ wall (2) at the same floor.

4. The multi-storey building with prefabricated members according to claim 1 or 2, characterized in that, at least one wall unit of the prefabricated bathroom (7) is a full- prefabricated wall, and is provided with a first grouting channel (71) in the lower part of the wall and a grouting hole (73) communicating with the first grouting channel (71) and arranged on the wall surface;

the first grouting channel (71) abuts alignment with a second grouting channel (72) arranged on the adjacent wall of the next floor, and the first grouting channel (71)

and the second grouting channel (72) are inserted with inner reinforcing steel bars, which are secured therein by means of pouring sand slurry.

5 5. The multi-storey building with prefabricated members according to claim 1 or 2, characterized in that, at least one wall unit of the prefabricated kitchen (8) is a full-prefabricated wall, and is provided with a third grouting channel (81) in the lower part of the wall and a grouting hole (83) communicating with the third grouting channel (81) and arranged on the wall surface;

10 the third grouting channel (81) abuts alignment with a fourth grouting channel (82) arranged on the adjacent wall of the next floor, and the third grouting channel (81) and the fourth grouting channel (82) are inserted with inner reinforcing steel bars, which are secured therein by means of pouring sand slurry.

15 6. A semi-prefabricating construction method for the multi-storey building according to claim 1, characterized in that, it comprises the following steps:

 Step A: laying a semi-prefabricated floor plate (31) and putting reinforcing steel bars on the semi-prefabricated floor plate (31);

20 Step B: placing and fixing the prefabricated outer wall (1), the prefabricated bathroom (7) and the prefabricated kitchen (8), binding reinforcing steel bars of the load-bearing cross wall (2) and the column (5), and then fixing the formwork;

 Step C: forming the load-bearing cross wall (2) and the column (5) by pouring concrete into the formwork, and forming the floor plate (3) through casting concrete on the semi-prefabricated floor plate (31) with reinforcing steel bars; and

25 Step D: placing and fixing the prefabricated staircase (6), finishing the installation of the prefabricated staircase (6), and removing the formwork of the load-bearing cross wall (2) and the column (5).

30 7. The semi-prefabricating construction method for the multi-storey building according to claim 6, characterized in that, in each step concrete is pumped to the working floor by means of a high pressure pump from a concrete mixer, which is located on the bottom surface of the working floor.

35 8. The semi-prefabricating construction method for the multi-storey building according to claim 7, characterized in that, the Steps A, B, C or D are performed across different side wings of a building within one day.

 9. The semi-prefabricating construction method for the multi-storey building according to any one of claims 6 to 8, characterized in that, in Step B, the horizontal

exposed reinforcing steel bars pre-buried at the bottoms of the prefabricated bathroom (7) and the prefabricated kitchen (8) are connected with the reinforcing steel bars arranged on the semi-prefabricated floor plate (1); and

in Step C, at least one wall unit of the prefabricated bathroom (7) is securely
5 connected with the adjacent wall, and at least one wall unit of the prefabricated kitchen (8) is securely connected with the adjacent wall.

10 10. The semi-prefabricating construction method for the multi-storey building according to claim 9, characterized in that, the at least one wall unit of the prefabricated bathroom (7) or the prefabricated kitchen (8) is a semi-prefabricated wall, and in Step C the semi-prefabricated wall of the prefabricated bathroom (7) or the prefabricated kitchen (8) is connected with the cast-in-situ wall (2) at the same floor into one piece.

15 11. The semi-prefabricating construction method for the multi-storey building according to claim 9, characterized in that, the at least one wall unit of the prefabricated bathroom (7) or the prefabricated kitchen (8) is a full-prefabricated wall, and is provided with a connecting hole in the lower part of the wall and a grouting hole communicating with the connecting hole and arranged on the wall surface. The
20 connecting hole abuts in alignment with the connecting hole arranged in the adjacent wall of the next floor;

in Step C, through inserting inner reinforcing steel bars and then pouring sand slurry in the connecting hole of the prefabricated bathroom (7) or the prefabricated kitchen (8) and the corresponding connecting hole in the adjacent wall of the next
25 floor, the walls in two adjacent upper and lower floors can be secured together.

30 12. The semi-prefabricating construction method for the multi-storey building according to any one of claims 6 to 8, characterized in that, in Step D, the exposed reinforcing steel bars pre-buried in the floor plate connecting the upper and lower ends of the prefabricated staircase (6) are inserted in the mounting hole arranged in the upper and lower ends of the prefabricated staircase (6), and the prefabricated staircase (6) and the floor plate are securely connected with each other through pouring sand slurry in the mounting hole (61).