The foregoing and other objects and features of the invention will become apparent from the following description of preferred embodiments of the invention with reference to the accompanying drawings, in which:

FIG. 1 is a perspective view of a modular wall interlocking with modular structural connection (known as MSC) having beams and columns forming a room/floor area in according with the present invention;

FIG. 2A is a plan view (from top) of the structural connection system reinforced with RC column in accordance with the present invention;

FIG. 2B is a plan view of the structural connection system in accordance with the present invention, wherein the upper slab and beam are omitted from the connection system;

FIG. 3 is a perspective view (external and internal) of a modular wall in accordance with the present invention;

FIG. 4 is a perspective view sectional view showing assembling modular wall panels along section line A-A of FIG. 3 of the present invention;

FIG. 5 is an enlarged view along area marked “A” of FIG. 4 of the present invention; and

FIG. 6 is an enlarged perspective view along area marked “B” of FIG. 4 of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Reference be made in detailing the preferred embodiments of the present invention, examples of which are illustrated in the above mentioned drawings. The preferred embodiments of the present invention are not intended to limit the invention in its broadest aspect to these embodiments. On the contrary, the present invention is intended to cover alternatives, modifications and equivalents, which may be included within the spirit and scope of the present invention as defined by the appended claims.

FIG. 1 is a perspective view showing a completed modular wall (100) in accordance with the present invention. In the preferred embodiment, there is provided a method for constructing a modular wall (100) by using modular wall panels (12, 22) together with beams (14, 24) and column structure (60) or framework, and interlocking mechanism (45) such as steel rod (Rebar) or brackets, and RC slab for flooring of the upper deck of a building. As shown in the

figure, it forms a room/floor area which allows creation of vertical expansion from a single storey.

FIG. 2A is a top view showing the beams and columns of the connection system (MSC) being reinforced with RC columns (50) in accordance with the present invention. In the figure, the external panel (12) is mounted together with an internal panel (22). FIG. 2B is a plan view of the structural connection system in accordance with the present invention, wherein the upper slab and beam are omitted from the connection system.

FIG. 3 is a perspective view showing the view of the external panel (12) and the internal panel (22) in accordance with the present invention. In the drawing, RC beam is denoted by reference number 14, a RC column is denoted by 60, reference 80 denotes brackets for fastening of the panels (12, 22), and the external panel (12) and internal panel (22) are being denoted as 12, and 22 respectively.

FIG. 4 is a perspective view schematically showing the mounting of the external panel (12) and the internal panel (22) in accordance with the present invention.

FIG. 5 is a perspective view showing the combination of MSC having a RC beam (24) together with the external panel (12) and internal panel (22), and the interlocking mechanism (45) which is a rebar. The interlocking mechanism (45) passes through the hole (44) provided on the external panel (12)

FIG. 6 is a perspective view showing the structural connection system panel with the modular wall panels (12, 22) for upper level of a building.

As shown in FIG. 4, an external modular wall panel (12) and an internal modular wall panel (22) are used as an illustration to show the method of constructing a modular wall (100). The structural connection system (MSC) in accordance with the preferred embodiment of the present invention is the beams and columns structure or framework, and the steps of the construction are being desired hereafter.

The external modular wall panel (12) and the internal modular wall panel (22) are arranged in opposite to each other (refer to FIG. 4). Both the external modular wall panel (12) and the internal modular wall panels (22) are provided with an internal and an external face portion and also, lateral edges (121, 221). A plurality of holes (44) are formed on the lateral edge (121, 221) of the panels (12, 22). The internal face portion of each of the modular wall panels (12, 22) faces each other. The external modular wall panel (12) has a 300 mm additional height as compared to the internal modular wall panel (22) so as to enact the interlocking

CLAIMS

1. A method of constructing modular wall using a structural connection system (MSC) having beams and column structure or framework comprising the steps of:

(i) arranging an external and internal modular wall panels (12, 22), each of the wall panel (12, 22) having an internal and an external face portion, lateral edges, and a plurality of holes (44) being formed on the lateral edge of the modular wall panels (12, 22), wherein the internal face portion of each of the first and second modular wall panels (12, 22) faces each other, and the width of the modular wall panels (12, 22) ranges from 300mm to 600mm, and the size of the beam ranges from 375 mm by 300mm;

(ii) inserting a locking mechanism (45) being a rebar through the holes (44) on each of the modular wall panels (12, 22) for strength and stability of the modular wall panels (12, 22); wherein the Rebar (45) is shaped structural member selected from the group consisting of: a solid rod, a hollow tube, a channel, and an angled member.

(iii) reinforcing using RC slabs to act as a ceiling and flooring for the upper deck of a floor of a building structure, whereby the beams and column structure or framework is provided with a plurality of holes (44) to enable a steel rod to be inserted through with the modular wall panels (12, 22), and a second steel rod is inserted into the beams and column structure or framework through the external modular wall panel.

2. The method of constructing modular structural connection system of Claim 1, wherein the Rebar is an interlocking mechanism for the modular wall panels.

3. The method of constructing modular wall of Claim 1, wherein a multiple levels of modular wall is obtained by employing the steps (i) to (iii) set forth in Claim 1.

4. The method of constructing modular wall of Claim 1, wherein varying thickness of the partition wall is obtained by using variable number of modular wall panels.

5. The method of constructing modular structural connection system of Claim 1, wherein the structural connection system (MSC) is the beam and column structural framework.

6. The method of constructing modular wall of Claim 1, wherein the plurality of holes (44) provided on the edges of the external and internal wall panels (12, 22) are of size permitting the insertion of Rebar (45).

7. The method of constructing modular wall of Claim 1, further comprising the step of (iv) fastening the modular structural connection system (MSC) to the modular wall panels (12, 22).