CLAIMS

1. A wall panel comprising:

a pre-cast concrete core having opposing front and back faces and opposing side faces; and

a woven fibre membrane mesh bonded to each of the front and back faces;

wherein the pre-cast concrete core comprises a pre-cast solid concrete core or a pre-cast hollow-core concrete core.

2. The wall panel as claimed in claim 1, wherein the side surfaces of the concrete core are exposed.

3. The wall panel as claimed in any one of the preceding claims, wherein the side faces comprises structures for joining of the wall panel to another wall panel.

4. The wall panel as claimed in any one of the preceding claims, wherein the pre-cast concrete core comprises one or more hollow cores.

5. The wall panel as claimed in any one of the preceding claims, wherein an external surface of or at each of the woven fibre membrane meshes is roughened for facilitating plaster or skim coating.

6. The wall panel as claimed in claim 5, wherein the external surface comprises particles such as sand particles.

7. The wall panel as claimed in any one of the preceding claims, further comprising a plaster or skim coating on each of the woven fibre membrane meshes.

8. The wall panel as claimed in any one of the preceding claims, wherein a height of the wall panel is in a range up to about 6000mm, and preferably about 3000mm.

9. The wall panel as claimed in any one of the preceding claims, wherein a width of the wall panel is about 600mm.

10. The wall panel as claimed in any one of the preceding claims, wherein a thickness of the wall panel is in a range from about 70mm to 100mm.

11. The wall panel as claimed in any one of the preceding claims, wherein the woven fibre membrane meshes comprise one or more of a group consisting of fibres of glass, carbon, polyvinyl alcohol (PVA), polypropylene, kenaf (natural fibre) and other materials, weaved in a regular or random orientation.

12. The wall panel as claimed in any one of the preceding claims, wherein a bonding agent bonding the woven fibre membrane meshes to the front and back faces of the concrete core comprises one or more of a group consisting of epoxy resin, a polymer based material, a mineral based material and a cement based material.

13. The wall panel as claimed in any one of the preceding claims, wherein the concrete core comprises one or more of a group consisting of concrete made using Ordinary Portland cement (OPC) or other binders, and fillers that constitute fine and/or coarse natural, synthetic or recycled normal or lightweight aggregates, and autoclaved aerated or foamed concrete.

14. The wall panel as claimed in any one of the preceding claims, wherein the wall panel is prefabricated.

15. A method for fabricating a wall panel, comprising the steps of:

providing a pre-cast concrete core having opposing front and back faces and opposing side faces; and

bonding a woven fibre membrane mesh to each of the front and back faces;

wherein the pre-cast concrete core comprises a pre-cast solid concrete core or a pre-cast hollow-core concrete core.

16. A method as claimed in claim 15, wherein providing the pre-cast concrete core comprises pre-casting the concrete core.

17. The method as claimed in claims 15 or 16, comprising leaving the side faces of the concrete core exposed.

18. The method as claimed in any one of claims 15 to 17, comprising forming structures on the side faces for joining of the wall panel to another wall panel.

19. The method as claimed in any one of the claims 15 to 18, wherein providing the pre-cast concrete core comprises providing one or more hollow cores in the pre-cast concrete core.

20. The method as claimed in any one of claims 15 to 19, comprising roughening an external surface of or at each of the woven fibre membrane meshes for facilitating plaster or skim coating.

21. The method as claimed in claim 20, comprising providing particles such as sand particles at the external surface.

22. The method as claimed in any one of claims 15 to 21, further comprising providing a plaster or skim coating on each of the woven fibre membrane meshes.

23. The method as claimed in any one of claims 15 to 22, wherein a height of the wall panel is in a range up to about 6000mm, and preferably about 3000mm.

24. The method as claimed in any one of claims 15 to 23, wherein a width of the wall panel is about 600mm.

25. The method as claimed in any one of claims 15 to 24, wherein a thickness of the wall panel is in a range from about 70mm to about 100mm.

26. The method as claimed in any one of claims 15 to 25, wherein the woven fibre membrane meshes comprise one or more of a group consisting of fibres of glass, carbon, polyvinyl alcohol (PVA), polypropylene, kenaf (natural fibre) and other materials, weaved in a regular or random orientation.

27. The method as claimed in any one of claims 15 to 26, wherein a bonding agent bonding the woven fibre membrane meshes to the front and back faces of the concrete core comprises one or more of a group consisting of epoxy resin, a polymer based material, a mineral based material and a cement based material.

28. The method as claimed in any one of the claims 15 to 27, wherein the concrete core comprises one or more of a group consisting of concrete made using Ordinary Portland cement (OPC) or other binders, and fillers that constitute fine and/or coarse natural, synthetic or recycled normal or lightweight aggregates, and autoclaved aerated or foamed concrete.

29. The method as claimed in any one of the claims 15 to 28, wherein the wall panel is prefabricated.