Using the CBRI floor system without piers
Experiments and modifications by Glenn Kangiser

(Notes regarding floors for use in dog kennels, around pools, patios, decks etc.
Updated from a Countryplans thread)

The CBRI floor without the piers can be used anywhere you need a durable surface that is reinforced and cleanable such as decks, kennels and around pools or patios.

All you need to do in this case is get a bag of cement and a yard or two of plaster sand. Reinforcement is Jute erosion control netting available at Home Depot, landscape supplies etc. $75 for a 4' x 225' roll I think, or split burlap sacks would work too. For added strength I get Fibermesh from the local concrete company - about $6.50 per 1 lb bag - add a handful to each batch of concrete mix. The Fibermesh (or equivalent) is not mandatory and was not available when the floor was designed in India. I mention it as it is a very inexpensive way to greatly enhance the strength of your floor.

The jute is simply laid in a single layer over the smoothed out ground. Sand can be used to level the surface and provide a surface friction break for the plaster floor. Holes can be filled with loose soil or sand and lightly packed enough to hold you up while working. The jute will bridge them as reinforcement so no worries. Lap the jute at the sides a couple of inches to provide continuity of the reinforcement throughout the floor area. Take the jute reinforcement right to the edges of the floor area. A half inch to an inch from the edge is not a problem especially when Fibermesh is added to the mix.

If you want nearly no earth moisture coming up through, put a plastic vapor barrier under it with a little sand on it- maybe 1/2 inch or put an impermeable admix into the plaster or put it on afterwords. I have not used the plastic vapor barrier in my applications as it will ensure that moisture is trapped under the floor and I prefer it to be able to leave by evaporation through the floor. Usually it is never enough that you will even notice it.

Mix cement to sand about 1 to 3. Add a handful of Fibermesh to the mix and continue mixing until it is spread throughout the plaster. Make the mix reasonably wet for easy troweling. Plaster the mix over the jute thick enough to cover it just over the reinforcing material - maybe 1/4 inch thick total. Use a wood float or rubber tile grout float the first day as you want a surface that the second layer of plaster will stick to.

The next day come back with another coat appx 1/4 to 1/2 inch or so thick as needed to plaster a smooth surface over the previous coat. Remember you are using a cement rich mix and it is thin so a little wetter than normal cement is fine. The excess water will be used up quickly soaking into the previous days plaster and evaporating. When troweling smooth for a finish with a steel trowel...I like a swimming pool trowel with rounded corners and thin for flexibility... water may need to be sprayed a bit with a spray bottle or hose sprayer.

Don't forget Fibermesh in the second coat too. It makes the floor so strong that you will not break through a 1/2 inch floor under normal to heavy use. It is rated at 50 lbs per square foot but has been tested in India to 450 lbs per square foot with no problem.

If desired, color can be added to this top layer for pretty. Lots of troweling makes the surface all one color. Splotchy color heavy in places as well as multiple colors lightly troweled gives a natural flagstone look. Liquid or powdered colors can be used. Spray a bit of water with the powdered colors to prevent sticking to the trowel. It will look intense in places but will greatly lighten in color intensity when dry in a week or so.

Stucco mix could be used as a substitute for the plaster but performance may not be as good as your own known mix.

You can begin using the floor in a few days but about 7 would be best. Polyurethane can be used as an easily cleanable sealer after completely dry or you could use an admix to waterproof the cement too.

Coverage will be over 640 square feet per cubic yard of plaster at 1/2 inch thickness.

Note that with the CBRI floor I mention above you can go right around trees leaving a reservoir area open, and the floor will follow the contour of the growing roots under it with little or no damage. Simply cut the jute to conform to the area desired to be floored leaving sufficient room for the trees. If there is any damage repairs are as simple as mixing a bit of plaster, cleaning and adding a concrete bonder or Elmers glue to the surface and in the patch material if desired and just troweling it on and smoothing it. Fibermesh can be added to patch material as the exclusive reinforcement in it.

You can also mold the floor right over wood or earth curbs and make gutters etc. as desired. You are only limited by your imagination. Heck... you could build a plaster dog house with it if you wanted.