CLAIMS

1. A method of reducing moisture content of soil, the method comprising placing a device having a flexible, water-permeable membrane defining an enclosure for receiving a water swellable material, and a water swellable material received within the enclosure in soil, and removing water from pores of the soil through absorption by the water swellable material with net volume of the soil remaining unchanged, wherein the method of reducing moisture content of soil is a passive process carried out without introducing a chemical reaction to the soil and/or a chemical to the soil outside of the enclosure.

2. The method according to claim 1, wherein the flexible, water-permeable membrane is porous.

3. The method according to claim 1 or 2, wherein the flexible, water-permeable membrane is selected from the group consisting of a textile, synthetic fibres, weaved or needle punched fibrous material such as geotextile, an elastomer, a plastic mesh, and combinations thereof.

4. The method according to any one of claims 1 to 3, wherein the water swellable material comprises or consists of a gel.

5. The method according to any one of claims 1 to 4, wherein the water swellable material comprises or consists of a hydrogel.

6. The method according to any one of claims 1 to 5, wherein the water swellable material is selected from the group consisting of bentonite, acrylate, urethane, cellulosic-based superabsorbent materials, and combinations thereof.

7. The method according to any one of claims 1 to 6, wherein volume of expansion of the water swellable material upon absorption of water is at least substantially the same as volume of water extracted from the soil.

8. The method according to any one of claims 1 to 7, wherein placing the device in soil is carried out from a ground surface of the soil by a horizontal drilling process.

9. The method according to any one of claims 1 to 8, wherein placing the device in soil is carried out from an underground service tunnel.

10. Use of a method according to any one in claims 1 to 9 in soil strengthening, underground excavation, underground mining, underground tunneling, or construction.