

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A tool for forming an underground cast-in-situ pile having an enlarged base, the tool comprising:
 - a first pile-forming member having a first base-forming member;
 - a second pile-forming member having a second base-forming member, the pile-forming members extending collinearly and being movable in a longitudinal direction relative to one another between:
 - a digging state wherein the base-forming members are proximate to one another so that the pile-forming members can be driven underground; and
 - a base-forming state wherein the base-forming members are spaced from one another so as to form an underground void between the first and second base-forming members, the void being fillable with a flowable fill to form the enlarged base of the underground cast-in-situ pile; and
 - jack screw means, rotation of which causes relative longitudinal movement between the pile-forming members.
2. The tool of claim 1, wherein the jack screw means is threadingly engaged with the first pile-forming member such that rotation of the jack screw means in one direction moves the pile-forming members into the digging state, and rotation of the jack screw means in the opposite direction moves the pile-forming members into the base-forming state.
3. The tool of claim 2, wherein the jack screw means and the second pile-forming member are rotatable, but not longitudinally movable, relative to one another.
4. The tool of claim 3, wherein the second pile-forming member comprises a collar via which the jack screw means is secured to restrict relative longitudinal movement therebetween, and wherein a thrust bearing is disposed between the jack screw and the second pile-forming member to enable relative rotation therebetween.
5. The tool of any one of the preceding claims, further comprising limiting means for limiting the extent to which the base-forming members can be spaced from one another.
6. The tool of claim 5, wherein the limiting means comprises a collar extending from the jack screw means, and wherein when the pile-forming members are moved into the base-forming state, the first pile-forming member engages the collar, thereby limiting

longitudinal movement between the pile-forming members which would further increase the space between the base-forming members.

7. The tool of any one of the preceding claims, wherein the pile-forming members are telescopically arranged and configured such that one pile-forming member cannot be rotated independently of the other pile-forming member.
8. The tool of any one of the preceding claims, wherein:
 - the first pile-forming member is a first screw pile;
 - the second pile-forming member is a second screw pile;
 - the first base-forming member is a first helix; and
 - the second base-forming member is a second helix.
9. The tool of any one of claims 1 to 7, wherein:
 - the first pile-forming member is a first blade pile;
 - the second pile-forming member is a second blade pile;
 - the first base-forming member is a first blade; and
 - the second base-forming member is a second blade.
10. A method of forming an underground cast-in-situ pile having a shaft and an enlarged base, the method using a tool of any one of the preceding claims and comprising:
 - (a) when the pile-forming members are in the digging state, driving the pile-forming members underground to a predetermined depth;
 - (b) moving the pile-forming members towards the base-forming state to form an underground void to which a flowable fill can be supplied;
 - (c) while moving the pile-forming members towards the base-forming state, supplying the flowable fill to the void so as to form the enlarged base of the underground cast-in-situ pile; and
 - (d) driving the pile-forming members out of the ground while supplying the flowable fill underground to form the shaft of the cast-in-situ pile.
11. The method of claim 10, wherein step (b) further comprises:
 - (i) while moving the pile-forming members towards the base-forming state, determining the magnitude of a force required to move the pile-forming members towards the base-forming state;

(ii) if the magnitude of the determined force is below a threshold amount, repeating steps (a) and (b) at a deeper depth underground until the magnitude of the determined force is equal to or greater than the threshold amount; and

(iii) when the magnitude of the determined force is equal to or greater than the threshold amount, continuing to move the pile-forming members towards the base-forming state while supplying the flowable fill to the void to form the enlarged base.

12. The method of claim 11, wherein the force relates to a torque force applied to the jack screw means to move the pile-forming members towards the base-forming state.

13. The method of claim 11, wherein the force relates to an axial force carried by one or both pile-forming members.