CLAIMS

1. A device such as a fan, turbine or pump (1) comprising a rotor, the rotor comprising:

an elongated first end portion (5) having a longitudinal axis (21) and at least one pair of blades (6),

first blade (6) having a root which is substantially helically shaped to the longitudinal axis (21), according to a logarithmic, exponential, power or other sequencing

wherein the sequence of roots begins at origin (23) of a first end of first end portion (5) and extends to a second end of first end portion (5),

and wherein the first blade (6) has a flat and/or concave pressure surface,

characterized in that the first opening (4) defining the fluid intake is provided substantially longitudinally aligned with the substantially helically shaped first end portion (5),

wherein the tangent to the root of the blade (6) approaches perpendicular alignment to the axis (21) at the origin (23) of the first end portion (5) and at a first longitudinal limit of the first opening (4) perpendicular to axis (21) at plane (19), and

wherein the second end portion (24) comprising a second opening (10) defining a fluid outlet is longitudinally offset from the first opening (4).

2. The device according to claim 1, wherein the diameter of axis (21) increases as it approaches origin (23) at the first end portion (5).

3. The device according to claim 1 or 2, wherein the second blade (16) in the second end portion (24) is substantially continuous with the first blade (6) in the first end portion (5).

4. The device according to any of claims 1 to 3, wherein the second opening (10) is longitudinally aligned with axis (22) at the second end portion (24), and the diameter of axis (22) increases as it approaches a third longitudinal limit (20) at the second end of second end portion (24).

5. The device according to any of the previous claims, wherein the fan, turbine or pump (1) directs a fluid from multiple ducts (32) connected to a housing (2) of the first end portion (5) to one or more ducts (17) connected to a housing (7) of the second end portion (24).

6. The device according to any of the preceding claims, wherein the blades and/or axis include penerations(30).

7. The device according to any of the preceding claims, wherein the surface area of the second blade (16) is the same or less than the surface area of the first blade (6).

8. The device according to any of the preceding claims, wherein the second blade (16) consists of serrations and/or is scalloped (17) along the outer edge.

9. The device according to any of the preceding claims, wherein the device comprises a housing portion (2) wherein the radius of housing portion (2) increases at the first longitudinal limit of the first opening (4) perpendicular to axis (21) at plane (18) conforming to an increased blade radius of the first end portion (5).

10. The device according to any of the preceding claims, wherein the radius housing portion (3) decreases at the second end of second portion (24).

11. The device according to any of the preceding claims, wherein the rotor further comprises an elongate second substantially helically shaped portion having a longitudinal axis, the second helically shaped portion, having an opposite chirality to the first substantially helically shaped portion,

first end portion (5) and at least two pair of blades (6a and 6b),

a first blade (6a and 6b) having a root which is substantially helically shaped to the longitudinal axis (21) according to a logarithmic, exponential, power or other sequencing

wherein the sequence of the root begins at origin (23) at a first end of first end portion (5) and extends to a second end of first end portion (5),

and wherein first blade (6a and 6b) has a flat and/or concave pressure surface,

a first opening (4) defining the fluid intake provided substantially longitudinally aligned with the first and second substantially helically shaped first end portions (5),

wherein the tangent to the blade (6a and 6b) approaches perpendicular alignment to the axis (21) at the origin (23) of the first end portion (5) and at a first longitudinal limit of the first opening (4) perpendicular to axis (21) at plane (18), and

wherein the tangent to the blade (6a and 6b) approaches parallel alignment to an axis (21) at the second end of the first end portion (5) and a second longitudinal limits (8a and 8b) of the first opening (4) perpendicular to axis (21) at planes (19a and 19b),

wherein a second end portion (24) comprises second openings (10a and 10b, or 11a and 11b) defining a fluid outlet longitudinally offset from first opening (4).

12. The device according to any of the preceding claims, wherein the device is contained within a water-proofing vent (37) extending beyond a building envelope.

13. The device according to any of the preceding claims 10-12, wherein the device comprises: a first housing (7a) and a second housing (7b);

a first transfer unit (12a) connected to one end of each housing (7a or 7b), and a second transfer unit (12b) connected to the opposite end of each housing (7a and 7b);

a first transfer opening (11a and 11b) configured in each transfer unit (12a and 12b), connected to the opposite end of a housing (7a and 7b);

a second transfer opening (13a and 13b) configured in each transfer unit (12a and 12b), adjacent to the first transfer opening (11a and 11b) and connected to the opposite end of the other housing (7a and 7b).

14. The device according to any of the preceding claims, wherein the device further comprises:

a third opening (27) defining the fluid intake at the first end (18) of the first end portion (5) axially aligned with axis (21)