Claims

1. A sensor device for a pit, the device comprising:
a distance sensor configured to determine a distance from the sensor to a water or content level within the pit, wherein the distance sensor comprises a radio frequency (RF) radiation emitter and receiver;
a processor for interpreting the determined water level and preparing a transmission signal;
a transmitter of the transmission signal;
wherein the distance sensor, processor and transmitter are housed within a package.

2. The sensor device according to claim 1, wherein the distance sensor is configured to measure flow rate of water moving in the pit.

3. The sensor device according to claim 1, wherein the sensor device comprises a sensor of water entering the pit.

4. The sensor device according to claim 1, further comprising a light level detector configured to measure light entering the pit through an opening into the pit.

5. The sensor device according to claim 4, wherein the processor is configured to interpret the measured light and including in the transmission signal the interpretation of the measured light.

6. The sensor device according to claim 4, wherein the opening into the pit is into a street and is in a side of the pit such that light enters at an acute angle to the bottom of the pit relative to the position of a housing, the light level detector and the distance sensor are housed within the housing that is located on a roof of the pit, and the light level detector is arranged to receive light from the opening and the distance sensor is arranged to measure the in the direction of the bottom of the pit.

7 . The sensor device according to claim 1, wherein the distance sensor comprises a first lens facing towards the bottom of the pit and a second lens facing towards

a path of water entering the pit through the opening and moving towards the bottom of the pit.

8 . The sensor device according to claim 3, wherein the processor is configured to interpret readings from the distance sensor to determine the presence of debris in water entering the pit or in water travelling through the pit.

9 . A sensor system for a drainage system, the sensor system comprising a plurality of sensor devices, wherein each device comprises: a distance sensor configured to determine a distance from the sensor to a water or content level within the pit, wherein the distance sensor comprises a radio frequency (RF) radiation emitter and receiver; a processor for interpreting the determined water level and preparing a transmission signal; and a transmitter of the transmission signal.

10 . The system according to claim 9, further comprising a receiver of the transmission signal of each sensor device, and a processor of the received signals.

11 . The system according to claim 10, wherein the processor is configured to monitor the status of the drainage system.

12. The system according to claim 11, wherein the processor is configured to make determinations from a plurality of pits in order to make collective determinations about groups of pits or the network of pits.

13. The system according to claim 9, wherein the processor is configured to send a control signal to a valve or gate in a stormwater drainage system based on one or both of the level of water in the pit or group of pits and the flow rate of water in a pit or group of pits.

14 . The system according to claim 13, wherein the processor is configured to redirect the flow of water through the drainage system to address a possible overflow in the stormwater drainage system.

15 . The system according to claim 9, wherein the processor is configured to use a detection of increasing level of water (rate of change of level) to predict a possible flood event.

16 . The system according to claim 15, wherein the processor is configured to control the drainage network to mitigate against the possible flood event.

17 . A method of detecting the level of water or contents in a pit, the method comprising;

a. using an RF distance sensor located proximal an upper portion of the pit to measure distance to a water or content level and provide a reading,
b. using a transmitter to transmit the measurement wirelessly.