An Innovative Public Sector in 2017 – New Solutions to Complex Challenges

EPSA2017143 Robby the Rat
Submitted by the City of Breda (NL)

The city of Breda, a medium sized city in the Netherlands, established a programme to become a climate-proof city. Keywords in this programme are liveability, awareness and robustness.

We like to highlight two projects that are part of this programme. The first, a new area in Breda called 'Waterakkers' is recently developed. This area is home to a new, large multi-purpose pond where nature and recreation come together. It provides an attractive living environment, but also increases the robustness of our city. As a natural water treatment plant it collects rainwater, purifies it and returns the water to nature. To monitor and control this system, the city of Breda and the regional waterboard Brabantse Delta work together to measure rainfall, water levels and volumes of water. The highly advanced automation system uses innovative techniques like predictive maintenance to keep the system running as effective as possible. All data is made available and visualised in an accessible way on a public website.

In the area, there are about 21 QR code points, leading visitors to information on the website about that specific part of the water system. By sharing this information, residents and visitors become aware of sustainable water management in their neighbourhood. This increases involvement between citizens, municipality and the regional waterboard: by providing and sharing this kind of information, visitors are able to understand in what way a well-functioning water system contributes to a healthy environment, resulting in a more conscious behaviour and attention for misuse. In the longer term, this will save management costs.

The other project we would like to highlight is the Chippo competition 'Robby the Rat'. This competition is similar to an 'underground balloon competition' and is focused on primary school children. In this competition, we ask children to flush a small electronic chip (called Chippo) through the toilet. The Chippo's are detected by antennas that are set up in the sewer system, thus following the progress in real-time. Using this track and trace system, we are able to detect and locate any incorrect sewer connections and / or failures in the water system. By involving children in the competition, they become more conscious of water usage by acting as young researchers in a playful way. The competition makes it easy to reach a large target group at relatively low cost and increases awareness amongst our future generations.

The most recent development is that the technique is now being used to investigate flow behaviour in risk zones. For example, in the railway-area where trains pass by with hazardous substances. The improved understanding of the water flow supports decisions to turn off/on pumps or close sewers during a disaster. The next development is the use of image recognition for detection of the chippo's. The Robby the Rat programme is a joint venture between the municipality of Breda, the waterboard Brabantse Delta, the primary schools in Breda, business and society.