The main function of the Taulat CSO detention tank is environmental protection for the new Besòs seafront, reducing rain water events which causes pollutant spills to the receiving waters (CSO, combined sewer overflow). The tank is placed under the Taulat Street, in the Fòrum Universal de les Cultures del 2004 actuation zone. Its design allows it to store little rain events, with a maximum return period of 3 months. The aim is collecting the initial part of the rain event, which is the most contaminated because of both low dilution factor and first flush.

Specifically, the tank receives the rain water from the basins of Riera d'Horta, Diagonal-Mar, La Catalana and La Depuradora and its objective is avoid pollutant spills to the body water and guarantee its treatment in the Besòs waste water treatment plant.

Barcelona's combined sewer system has a telecontrol system which allows the network's flow state monitoring and regulator's real time performance such as gates, pumping stations and regulation tanks. The Taulat CSO detention tank, as an integrated element in the combined sewer system, requires a telecontrol system that will establish the tank's performance during rain events. It is called Local Control.

The Local Control strategy's principal objective is determinate the system regulator's performance (gates and pumps), using local sensor measurements, in order to optimise the tank's behaviour and to achieve the objectives defined in its design.

Regulator's behaviour must be lead to store the maximum water volume and to retain it until the its treatment in the Besòs waste water treatment plant is guaranteed.

An important variable used in the control strategies' definition is “water permanence time”. This means the time while water is stored in the tank and it tries to represent a water quality parameter. Mixed sewage and rain water storage facilitate oxygen consumption and an anaerobic situation can be reached, where toxic gas is produced and risk of explosion or intoxication increases.

Other important variables used in regulation design process are water level in the tank and network conditions. In this case, these variables are the wastewater pumped from the tank and the waste water treatment plant capacity.

To establish the tank's Local Control strategy two different informatic tools have been used. The first one is an off-line hydraulic simulation model from DHI (Danish Hydraulic Institute) called MOUSE. This model allows one to know about sewer system's hydraulic behaviour and to model the tank's behaviour with sewer system around it. Once hydraulic behaviour is known, the first version of the control strategies can be written. The other tool used in the design process is MATLAB/SIMULINK, a Control Systems' Design software. With MATLAB/SIMULINK a dynamic model of the sewer system can be built and simulations with different scenarios can be done, improving the control system until the results are satisfactory enough.