



Workers help install StormCapture precast concrete modules. Photo by Oldcastle

well drops to a pre-set level. WAHASO's WCS-100 Control System with a customizable programmable logic controller (PLC) and panel tracks system activity and reports data and alarms locally as well as to building automation systems through BACNET or MODBUS.

The system logs and reports the amount of water available in the cistern, how much is captured for reuse, and the amount of municipal water demanded by the system.

WAHASO's OptiRTC technology, integrated into its stormwater harvesting systems, uses predictive modeling to actively determine stormwater detention requirements and release only as much stored water as is necessary to meet capacity requirements for each event. OptiRTC monitors local weather forecasts and onsite device inputs to anticipate storm flows to detention with 24 hours of occurrence. It lowers detention storage levels ahead of the precipitation event in proportion to storm volume and closes the outlet valve during storm events to capture and retain water for harvesting. All systems designed by WAHASO use NSF/ANSI 350 standards, which define non-potable water quality, for water reuse treatment systems.

#### Going forward

The system requires occasional maintenance to evacuate sediment and other debris, especially first flush debris after major rain events. Bag filters need to be changed every 4 to 8 weeks, and UV bulbs require replacement every 10,000 hours.

The stormwater management techniques are set to contribute from one to four points toward a LEED Gold rating, says Renee Azerbegi, president and project manager for Ambient Energy.

"Because of the drought, water conservation issues are being much more heightened," says Wong. "Technology for pre-treatment, post-treatment, and storage is here today.

# DIP Booster accelerates flow in gravity lines

The French company SIDE Industrie recently launched the DIP Booster, which is designed to accelerate flow in gravity wastewater and stormwater pipelines. It is derived from a high range of DIP wastewater pumps that are used in the company's DIP Systeme®, introduced 16 years ago. The pump design includes a shared hydraulic body that fits the pipe size, allowing the gravity flow to go through it. It includes a bypass valve, a level sensor upstream, and two variable speed hydraulic drives connected in parallel using VFDs.

Among all its applications, this innovation is particularly suitable in the cases of pipes with insufficient slope or pipes undergoing periodic backups or undersized pipes. The DIP Booster will increase the flow for a gravity-fed line of ND 6 to ND 40 inches and thus provides savings on replacing large segments of pipe.

#### How it works

Gravity flow, at the heart of the system, continues as long as flow passes through the DIP Booster and does not fill the pipe. When the motors are off, the ALC control panel leaves them on stand-by and continuously checks the level via the level sensor. When water level rises and the gravity flow fills the

pipe once the start-up level of the first motor unit is reached, the DIP Booster will start up one pump slowly and then accelerate the flow, activating the internal check valve. The second motor unit starts up if the upstream pressure increases. The motors stop when the upstream flow decreases back down to the gravity-flow pressure setting.

#### Applications

In the stormwater sector, this innovation is useful for manifolds and pipes that have insufficient slope or when pipes are undergoing periodic backups. It is also useful when pipes are inadequately sized for current flow loads or even when increased scouring is needed. The DIP Booster also provides flow acceleration in existing pipes as an anti-flooding preventive measure.

The DIP Booster opens new avenues for solving stormwater challenges more easily and at a lower cost, according to SIDE Industrie. Instead of replacing the whole line, a DIP Booster could be installed upstream of the pipe section having problems in order to accelerate the flow. The device is suitable for use in numerous configurations from stormwater treatment to combined sewer reinforcement or flood control and prevention.

SIDE Industrie USA is based in Manhattan, Kansas.

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