Rain Event Summary Report
Using the Smartflow System

Report Updated: 7/12/2025

1. General

1.1 On **December 6, 2025**, the first rain event following installation was documented at **13 Sanhedrin Street, Tel Aviv**, managed by the Smartflow system.

1.2 This document summarizes the system's key capabilities and data from the event, focusing on water level readings around the drains and the retention and drainage capacity of the roof during a short, high-intensity rain event.

2. System & Roof Description

2.1 **Location:** 13 Sanhedrin St., Tel Aviv

2.2 **Date:** December 6, 2025

2.3 **Effective Roof Area (runoff):** 112 m²

2.4 **Active Drains:** 5

2.5 **Wall Curb Height:** Defined as 0 cm; roof slopes nearly flat toward drains located 23 cm below curb level. A Smartflow smr-300 sensor monitors real-time water level around each drain.

3. Event Description

3.1 System response first detected around **16:56**.

3.2 Sharp water level rise at drains within minutes, peaking around **17:01**.

3.3 After drain openings, gradual decline observed, returning to stable "baseline" level around **17:22**.

4. Key Quantitative Findings

4.1 Peak water level above baseline: ~**2.7 cm** on average — equivalent to ~**3 m³** retained on the roof at event peak.

4.2 Total drainage time (peak → baseline): ~**25 minutes**; ~3 m³ drained from entire roof via 5 drains at a controlled rate of ~2.5 L/s — without overloading the drainage network.

4.3 Maximum rainfall depth: ~**27 mm**

4.4 Total water volume: **3.0 m³**

4.5 Event duration: ~**25 minutes**

4.6 Average intensity over 25 min: ~**70 mm/hr**

4.7 Peak intensity (normalized to 1 min): **350 mm/hr**

4.8 Average daily intensity: ~**1.1 mm/hr**

4.9 **The event is characterized as short and intensive (~25 min), with a total rainfall near sub-millimetre, yet very high instantaneous intensities during accumulation.**

4.10 Despite the high real-time rainfall intensity during accumulation, the average daily intensity was ~1.1 mm/hr — a completely normal value for Tel Aviv in December. In other words, this was a short, aggressive event typical of a December shower.

4.11 Note: These are hydrological estimates based on observed retention and drainage behaviour, not direct measurements from a rain gauge station.

Figure 1 — Event data as documented in real time; data shown from 3 of 5 active sensors

5. System Performance Analysis

Based on data analysis (partially shown in the graph above), the following can be concluded:

5.1.1 **Rapid Event Response**

The system identified a sharp water level rise in a short time and responded accordingly.

5.1.2 **Significant Retention Capacity**

The roof functioned as a temporary elevated reservoir, retaining ~3 m³ at peak — reducing peak discharge to the municipal drainage network and enabling gradual, controlled water release.

5.1.3 **Controlled Drainage Without Overflow**

Water level declined gradually and returned to baseline within ~20 minutes, with no values indicating deviation from design. All drains showed consistent behaviour with reasonable variations due to slope and surface distribution — no signs of blockage or malfunction.

Smartflow System — Visual documentation of water accumulation during the event
Camera still: 2025-12-06 16:57:44

6. Conclusions

6.1 The system successfully withstood a short and intensive rain event while maintaining:

6.1.1 Significant volume retention — ~3 m³

6.1.2 Gradual, controlled water release

6.1.3 Prevention of extreme loads on the drainage network

6.2 The roof functioned as an effective, standalone runoff management unit, contributing to:

6.2.1 Reducing peak loads on the municipal drainage system

6.2.2 Improving runoff management at the building level

6.3 The event demonstrates the engineering and municipal value of using rooftops as retention and runoff management zones — particularly in dense urban areas.

Regards,

Smartflow - rws