

ABSTRACT

It is an undisputed fact that water is the pillar of life. Water on the surface of oceans evaporates, ascends to the upper layers of the atmosphere until it condenses to form clouds, which keep moving, and finally falls back as rain, snow or hail in what is known as the water cycle.

The combination of pure rainwater and anything carried by the rain in urban areas is called stormwater.

Combined sewers are predominant in Palestine. These sewers sometimes cease to take more sewage in and because of that floods occur creating many losses in lives or properties. For instance, in Anabta, an event happened in 2013 where two ladies died after a flood happened in a heavy rainy day that went for too long.

Hence the importance of having a drainage network to prevent these floods from occurring. Therefore the purpose from this project is to design a stormwater collection network for part of Nablus (al-amriya) depending on rainfall readings, which is implicitly represented in an IDF curve, to avoid any more losses. The approach in this project was based on the use of Bentley StormCAD, ESRI ArcGIS and MS Excel to develop a reality-simulating model.

The model consists mainly of three elements. The catchment, where 27 catchments were drawn, taking into account the elevations, so that the water is drained to the lowest point in the catchment, at which the catch basin was placed. The rational coefficient, time of concentration and the area were calculated for each catchment, and the catch basins were connected together by conduits.

The output of the model was that we came to a design that appears in conduits and their diameters, and catch basins and their dimensions.

In addition, we enhanced our results with two profiles, some conclusions and recommendations.