Green Stormwater Infrastructure: Stormwater Harvesting and Reuse – Rinker Hall Cisterns

[00:06] Mark Clark: I'm Dr. Mark Clark, and I'm here with Dr. Eban Bean, and we're going to talk about cisterns and green roofs today. Up on top of this building, which is the Perry construction building, there's a green roof, and that green roof is designed with a gravel media base, with plants that can grow on that.

[0:00:22] And that media will actually help capture some of the stormwater runoff. But what's a little bit different about this particular green roof is that in a bigger storm, some water will run off and typically go to a storm drain. But in this case, that stormwater will go somewhere else.

[00:35] Eban Bean: That's right. Any runoff or rainfall that exceeds the storage on top of this green roof up here gets redirected into some cisterns off to my right. These cisterns, there's two 1,500-gallon ones, will capture that runoff and then it can be used for irrigation during times of drought to provide for the plants, and provide another use for that water and reduce the nutrients that would normally be going into the stormwater runoff.

[01:00] Mark Clark: So, instead of having to possibly irrigate with basically potable water or maybe reuse water, we can recapture that water and reuse it.

[01:07] Eban Bean: That's exactly right.

[01:08] Mark Clark: So, let's have another closer look at it.

[01:11] Eban Bean: Sounds good.

[01:15] Mark Clark: So, here we are back on the business end of this cistern system. So, here's our two cisterns that are capturing any excess runoff. They're going to fill up, and basically once that water is stored in here, we could use that water by pumping it into the irrigation landscape. So, what's this whole construction about?

[01:31] Eban Bean: So, what we have here is, we have a main pump, and so when the water level in these cisterns, which is basically sensed by a float switch, when we have enough water, and we need to irrigate, this pump will kick on.

[01:43] It pulls water out of the cistern and distributes it into the irrigation system, which is tied into the building up above. When we don't have enough water in the cisterns, but we still need to irrigate, this system is also connected to our wastewater reuse system on campus.

[02:01] So what this allows is for the irrigation to be supplemented in times where we don't have cistern volume available, to still provide irrigation to the system.

[02:10] Mark Clark: And this system is passive, right? I mean there's controllers here. So, when there's a demand for irrigation, that you set previously, the pump system will decide, is there water available in these cisterns or do we actually have to call on the reclaimed water? But, basically once the criteria are set, it's pretty much going to operate behind the scenes.

[02:27] Eban Bean: That’s right.