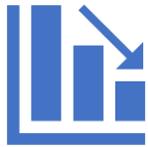




UCC Water Consumption Introduction



102 water accounts serving 130 buildings. 6 accounts cover 81% of our water use.



18% reduction in annual water use since 2009 despite significant capital expansion.



Average annual bills of €200,000 versus €2,200,000 for electricity / gas.



Annual consumption of 130,000 m3.

***** URGENT *****

Dear Colleague,

We have an underground water leak, within the HUB Construction Site, estimated to be in the order of 7.5 Tonnes per hour.



Terence/ Tim, I would be grateful if you would make arrangements to make good the leak as soon as possible, please, as we need to restore full connectivity to the UCC, Main Campus, Fire Ring Main.

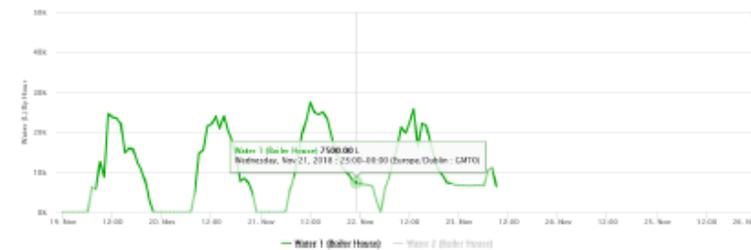
Thank you,

All the best,

Kevin

Hi Kieran,

looking at readings this morning it would seem that we have a leak as the readings did not return to 0 overnight. Looks like 7 m3 an hour





Business Priorities/Targets

Item	Business Priority/ Target Statement	Priority
1	Adherence to the Universities Sustainability strategy (http://greencampus.ucc.ie/strategy/)	High
2	Contribution to UN SDG 6	High
3	Moral obligation to conserve water	High
4	Create awareness among staff / students on water conservation.	Medium
5	Cost reduction	Medium

Short term targets (0-6 months)	Medium term targets (1 year)	Long term targets (3 years)
<ol style="list-style-type: none"> 1. Complete action plan for the Library. 2. Undertake water mapping of main campus, including controlled water outages. 3. Undertake water mapping of the significant water users (out of term and in term) 4. Review and scope out metering installation program. 5. Ensure current capital projects at design stage have 'Grey water' systems. 6. Promote water conservation measures across the University via the Green Campus Program. 	<ol style="list-style-type: none"> 1. Complete action plan for significant water users. 2. Installation of water metering systems and tracking of significant water users KPI's. 3. Incorporate high level check list for water conservation into capital projects sustainability specification, including rainwater management and landscaping. 4. Incorporate water into the Universities ISO 50001 program and obtain EWS certification. 5. Embed water conservation behaviour across the University. 	<ol style="list-style-type: none"> 1. Demonstrate a significant reduction in water consumption across the University. 2. Identification of alternative water sources and potential environmental benefit. 3. Demonstrate contribution to the UN SDG 6. 4. Increase water score for STARS rating from 2.5 to 4.5 out of 6.



Baseline Water Use and Costs

Baseline Water Use and Costs

Metering and Monitoring

Adhoc metering in place across the UCC property portfolio. The main campus accounts for 67% of the Universities water use with the main supply to the campus metered and connected back to the on site energy monitoring package. Of the 24 buildings connected to the mains supply we have meters fitted in 3 buildings, namely Boole Library, Cavanagh building and the Student centre of which only the Boole Library meters are connected to the monitoring package. Water metering installed in off campus buildings such as the WGB, ERI and Beaufort.

Water Bill Analysis

Adhoc billing arrangements in place i.e. bills are issued at different intervals and can be based on estimated or actual readings. For the main campus the annual water use is in the region of 45,000m³, down from a high of 83,000m³ in 2012 due to an extensive underground leak survey and repair program. Typical annual water charge of €200,000 - €250,000. When compared to energy costs the cost of water would be seen as less of a priority for the Building & Estates office.

True Cost of Water

The main consumers of water across UCC would be in the toilets / restroom facilities as well as laboratory areas. Water is not heavily used as a process medium nor is it pre-treated with the exception of the main boiler water treatment skid (consumes 3% of overall campus water use.)



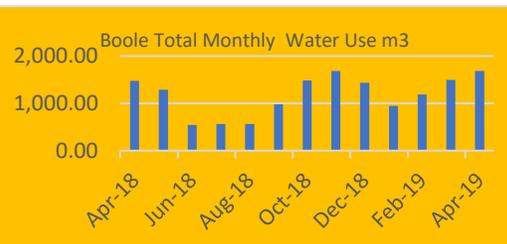
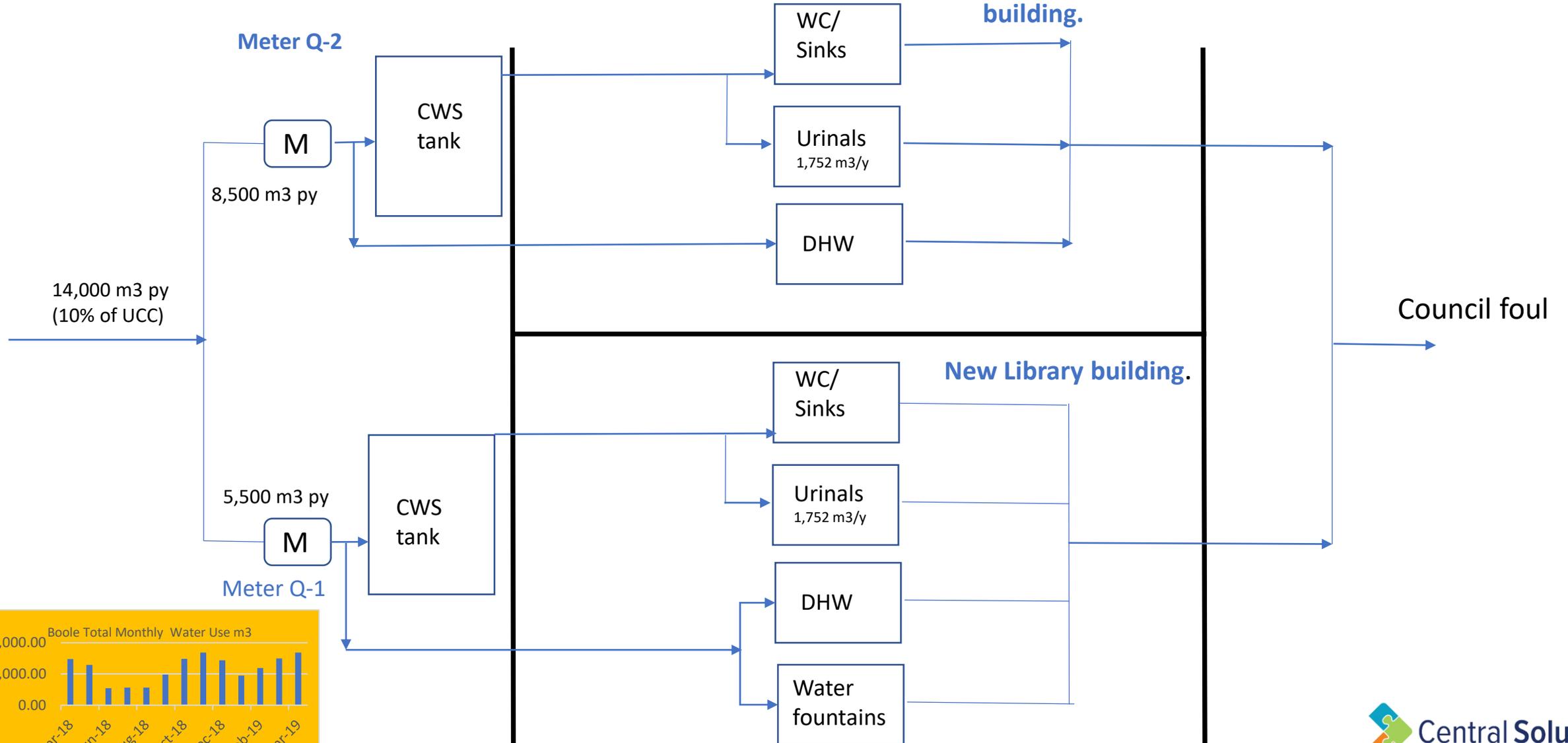
Boole Library Water Map

Supply / Distribution.

End users

Old Library building.

Sink





Water Conservation & Quick Wins At Boole

Item	Description	Action Type	Impact/ Targets
1	Reduce the flow rate to the urinals from 50L per hour to (1) 25L and assess and (2) if no issues then reduce to 10L and assess.	Just do it.	Potential to reduce urinal flow by 3,285 m3 per annum.
2	Set up alarm limits out of hours on the Library water meters to alert potential leakages	Just do it.	Early capture of leakage / stuck devices.
3	Include weekly Water consumption indicator, based on term time, with energy monitoring report.	Just do it.	Weekly tracking of water use.
4	Assess the feasibility of further reducing the water flows to the taps	Just do it.	Reduce the amount of water for hand washing.
5	Is it possible to reduce the capacity of the 9L flush cisterns on the W/C's?	A3.	With 52 W/C's , each with 8L capacity, the toilets have a potential instant load of 416L.
6	Shut off the water supplies to the building based on the opening hours.	A3.	Avoid water wastage / use / leak potential.
7	Identifying an alternative source of water for the CWS tank / WC's.	Other	Use of groundwater / grey water.
8	Include water conservation messages in the <i>Love our Library</i> building campaign.	Just do it.	Encourage water conservation / reporting of leaks & faults in a heavily used building.