

Water Stewardship Charter for NUI Galway



NUI Galway
OÉ Gaillimh

04/12/2020



EXCEEDING TARGETS
& GOING BEYOND 2020
BUILDINGS & ESTATES



NUI GALWAY CAMPUS 2020

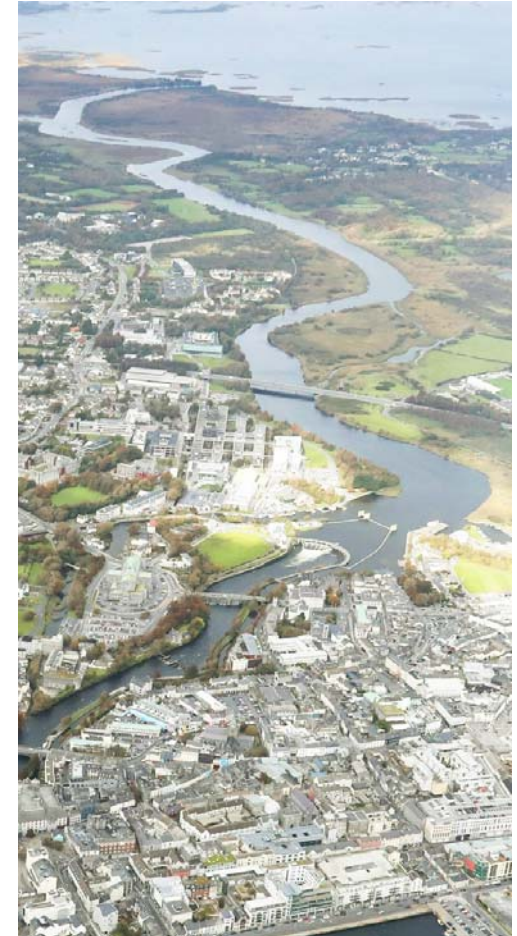
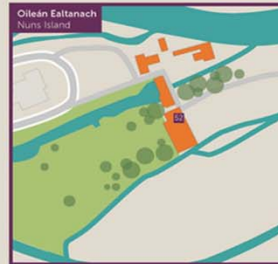


Zóifín an Champais
Campus Zones

- An Campas Spóirt, an Daingean
Sports Campus, Dangan
- An Campas Thuaidh
North Campus
- An Campas Láir
Central Campus
- An Campas Theas
South Campus

Eochair
Key

- Sli Inrochtana
Accessible Route
- ATM
- Stadanna Bus
Bus Stop
- Caiféanna/ Bialanna
Cafe/ Restaurants
- Fáiltiú
Reception





Business Priorities/Targets for Water Stewardship

Item	Business Priority/ Target Statement	Priority
1	<p>At NUI Galway we are committed to the responsible use of our water resources because we recognise the economic and environmental cost of providing safe, clean drinking water and the need to safeguard the supply for the future. Concerted efforts to reduce water consumption have been ongoing across the campus for more than a decade; from the completion of an extensive leak detection and repair programme in 2017, to improved monitoring, equipment upgrades and the adoption of behaviour change campaigns. In the period 2007/2008 to 2017/2018 alone, we have successfully reduced by 46% the water usage (per occupant) on campus.</p> <p>Over the next 5 years we are committed to maintaining these reductions on campus and achieving further. We will continue to highlight the importance of water as a critical and limited resource and eliminate all unnecessary water usage on campus. We will engage staff, students and visitors in responsible water usage on campus and by example encourage responsible water use practice in the wider community. We will continue to lead and contribute to water research providing sustainable local and global solutions for water resource management, supply and treatment. Through research led teaching and on-campus applied solutions we will ensure that our future water professionals are cognisant of best, sustainable practices in water resource management, treatment and supply.</p> <p>Strategic Aims</p> <ul style="list-style-type: none"> To raise awareness with staff, students and visitors of water as a critical and limited resource that must be used responsibly. To reduce water usage on campus by 10% by 2025 based on 2018 baseline. To eliminate all unnecessary water usage on campus, to maintain and further improve the water usage reductions achieved on campus in the last period. NUI Galway to utilise new technologies and methods to reduce water consumption on our Laboratory's and Research labs. To eliminate the reliance of staff, students and visitors on single use plastics for water consumption. 	<p>Water Conservation and Leadership is high on the NUI Galway Sustainable strategy document with targets set for 2025, this is also highlighted in the soon to be published in the roadmap Carbon Plan 2020 -2030</p> <p>SDG 6 and SDG7</p>



Baseline Water Use and Costs

Metering and Monitoring

WPRN No.	Address
9831822	Domestic Main, Newcastle Road Lower, Galway
9832883	Life Cycle & SRB Building, Newcastle Road, Galway
9832939	Campus Innovation Centre, Newcastle Upper Galway
9831823	St. Anthony's, Newcastle Upper, Galway
9831995	Tank Main, Newcastle Upper, Galway
9832598	Molecular Diagnostic Research, Unit 1, IDA Park, Galway
9831776	Dangan Sports Complex, IDA Business Park, Dangan Lower, Galway
9832239	Dept of Health Promotion, Distillery Road, Newcastle, Galway
9832237	Riverside Terrapin, Distillery Road, Newcastle, Galway
9832236	Block T, Distillery Road, Newcastle, Galway
3207229	16 Distillery Road, Galway
9832238	Martha Fox House, 4 Distillery Road, Lower Newcastle, Galway
9832053	University Road, Galway (Science Research place by Snipe Avenue)
9832785	Aula Maxima, College Road, Galway
9832300	Aula Maxima, College Road, Galway
9832894	Meter Opposite Cathedral, Earls Island, Newcastle, Galway
9832420	Meter No.1, Earls Island Newcastle, Galway
9831982	Nuns Island, Galway, Galway
9831908	IMI Road (MRI) University Road, Galway
9832895	IMI Road, Pedestrian Canal Path, University Road, Galway

Water Bill Analysis

Business Water Services Bill

NUI GALWAY
C/O MICHAEL CURRAN
BUILDING SERVICES & ENVR. MGR
BUILDINGS OFFICE
OLLSCOIL NA HEIREANN GAILLIMH
CO. GALWAY

Bill no: 0923580816
VAT no: IE3191827JH
VAT rate: Exempt

Your account number
0593411177

WPRN
9831908

Bill issue date	Billing period	Bill frequency
30/09/2020	16/05/2020 - 08/09/2020	Quarterly

Opening balance	€	-679.36	Number of days: 116
Less total payments since last bill	€	0.00	Service type: Water/Wastewater
Add total charges for this bill	€	2936.99	Tariff type: Non-domestic - Metered
See back of bill for details			Meter type: Metric

Total due €2257.63

Payments since last bill
Total payments: €0.00

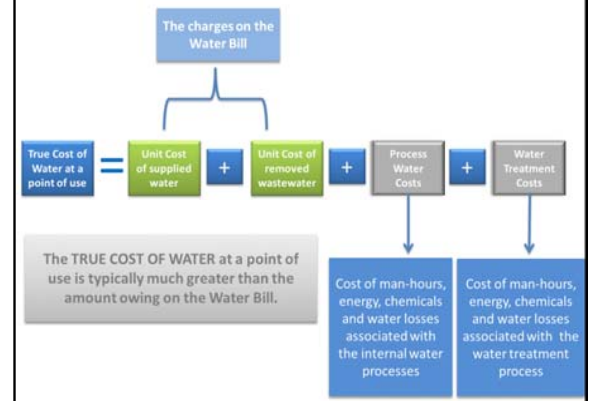
To be paid by 30/10/2020
Payment terms are 30 days from bill issue date

Michael Curran / NUI / 2020 / 20431 - 3901

Barcode: An Post Ref: 000109411778 00002257637 CODE 013675
0593411177 NUI GALWAY 2257.63

Typical Irish Water Bill – Link to Irish Water web payment portal

True Cost of Water



True Cost of Water:

NUI Galway currently pay on our large volume sites
The following costs:
Water Supplied: €1.10 per m3
Water Removed: €1.00 per m3

- Key components to be checked:
- Energy costs for pumps and equipment
 - Man-Hour Costs
 - Cost of Disposal
 - Regulatory Compliance

NUI Galway are employing two interims in Summer 2021 to carry out True Cost of Water on our Larger systems.



Baseline Water Use and Costs

Sample Water Meters Spreadsheet recording monthly volumes

NUI Galway BMS team and plumbing maintenance team record the monthly water Volumes to compare this against bills issued by Irish Water, a spreadsheet is updated By the plumbing services supervisor.

This will be updated in the new ISO50001:2018 template and will be web based tool recording the manual Meter readings, it will also be an action to update the meters on the right to Digital metering at a cost of €60k.

List of additional Manual Meters



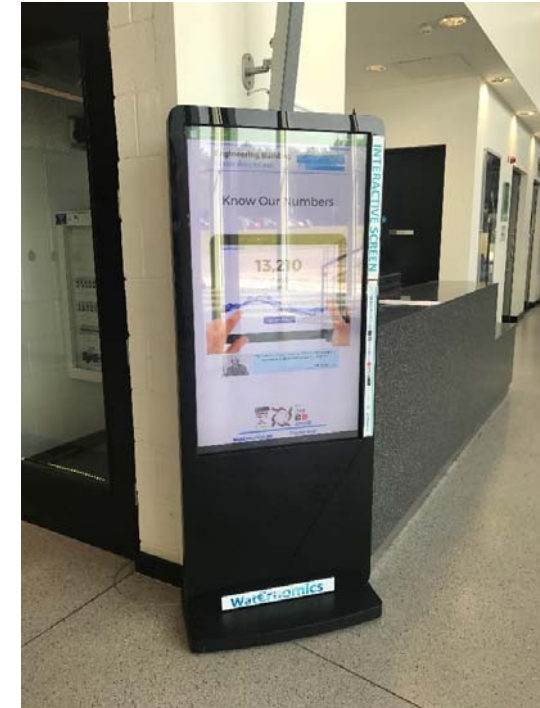
No	Location
1	Subway Meter
2	New Library Meter
3	Library and Restaurant Hot Water
4	Library Cold Water
5	Arts Science Water
6	Chemistry
7	Bio-chemistry
8	Physics
9	Kingfisher Tank 1
10	Kingfisher Tank 2
11	New Water Main Quad
12	Orbsen
13	The Bar
14	Earl's island
15	Hair Dresser
16	IT Buidling
17	Cold Rest
18	Kingfisher outside
19	Earl's island Road

Meter: 06H701345		Address		Meter: 07M157343		Address		Meter: 00W072500		Address		Meter: 12000021		Address		Meter: 14W709492		Address	
Read Date	Consumption	Read Date	Consumption	Read Date	Consumption	Read Date	Consumption	Read Date	Consumption	Read Date	Consumption	Read Date	Consumption	Read Date	Consumption	Read Date	Consumption	Read Date	Consumption
05/06/2018	3433	23/03/2018 23:59	1000	05/06/2018 10:10	7050	05/06/2018 09:58	409	05/06/2018 09:33	86										
12/03/2018	7912	17/05/2017 00:00	1415	12/03/2018 14:36	7410	12/03/2018 14:24	410	21/03/2018 10:47	97.202										
19/12/2017	1801.802	31/01/2017 00:00	0	06/12/2017 12:55	14740	06/12/2017 12:35	1190	15/02/2018 23:59	78.798										
29/11/2017	8198.198	30/01/2017 00:00	1367	25/08/2017 00:00	0	09/08/2017 00:00	4.343	06/12/2017 12:07	185										
30/08/2017	10294	01/11/2016 00:00	1503	25/04/2017 00:00	6150	26/04/2017 23:59	368.657	02/08/2017 00:00	113										
04/08/2017	9278.371	09/08/2016 00:00	1521	15/02/2017 00:00	0	16/02/2017 00:00	675	25/04/2017 00:00	87										
26/04/2017	9257.629	05/05/2016 00:00	1619	14/02/2017 00:00	8950	15/02/2017 00:00	605	15/02/2017 00:00	902										
15/02/2017	12823	08/02/2016 00:00	1676	02/11/2016 00:00	7760	27/10/2016 00:00	596	14/02/2017 00:00	105										
02/11/2016	12631	06/11/2015 00:00	1617	03/08/2016 00:00	6340	22/07/2016 00:00	244	02/11/2016 00:00	116										
03/08/2016	10181	12/08/2015 00:00	1812	29/04/2016 00:00	7910	17/05/2016 00:00	561	03/08/2016 00:00	1736										
03/05/2016	11941	29/04/2015 00:00	1447	03/02/2016 00:00	7510	01/02/2016 00:00	443	29/04/2016 00:00	2851										
03/02/2016	10744	11/02/2015 00:00	2072	03/11/2015 00:00	7350	06/11/2015 00:00	654	03/02/2016 00:00	2470										
06/11/2015	11246	10/11/2014 00:00	1938	04/08/2015 00:00	6640	25/08/2015 00:00	1172	03/11/2015 00:00	1911										
18/08/2015	10014	11/08/2014 00:00	2321	28/04/2015 00:00	6920	27/04/2015 00:00	862	04/08/2015 00:00	1869										
28/04/2015	10797	30/04/2014 00:00	1844	03/02/2015 00:00	7370	09/02/2015 00:00	1012	28/04/2015 00:00	923										
03/02/2015	12146	10/02/2014 00:00	1781	05/11/2014 00:00	7050	07/11/2014 00:00	793	12/03/2015 00:00	902										
05/11/2014	13329	08/11/2013 00:00	1774	08/08/2014 00:00	7580	12/08/2014 00:00	272												
08/08/2014	12989			29/04/2014 00:00	7190	12/05/2014 00:00	1894												
29/04/2014	12187			12/02/2014 00:00	8290	04/03/2014 00:00	675												
12/02/2014	14098			05/11/2013 00:00	7220														
05/11/2013	10853																		



Baseline Water Use and Costs

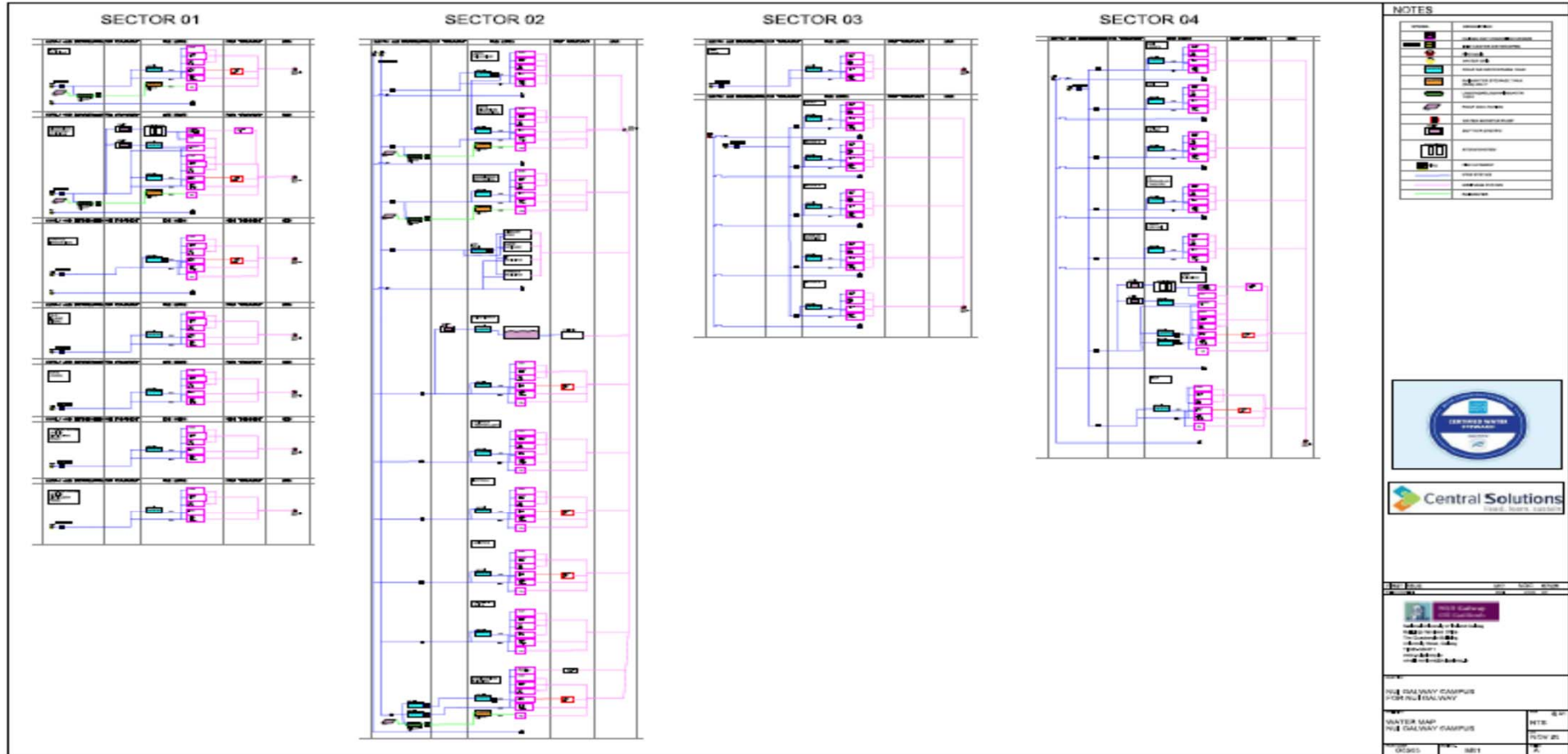
Building Management Advances and Knowledge sharing



Touch Screen Installed in Engineering building to advise students on usage.



Site Level Water Map



Water Stewardship Action Plan/Targets

Item	Description	Action Type	Impact/ Targets	Who	Next Step	Target Completion
1	To recognise water as a critical and limited resource by adopting a NUI Galway Water Policy	Kaizen Events	NUI Galway Strategic plan sets out targets to be achieved by 2025 as part of the Climate Action Plan and Carbon Reduction – Scope 3 Water	Buildings and Estates	Draft completed and for consultation	Q1 2021
2	To reduce, from a 2019 baseline, water usage in campus buildings by 10% by 2025	Kaizen Events	Strategic plan completed and published 27 th November 2020, action BE1 outlines the target	Buildings and Estate /CUSP	Action plan to be developed as part of the Carbon Plan	Q3 2021
3	Continue the programme of installing water metering and sub-metering on our largest water consumers.	Just do it	Plumbing Maintenance team and Building Management system installing additional digital meters for data collection.	Buildings and Estate	Ongoing as part of Register of Opportunities in ISO50001:2018	Q1 2021
4	By 2025 extend programme of measurement, analysis and efficiencies to all significant buildings on campus.	Kaizen Events	ISO50001:2018 Energy Team to incorporate Water as part of the new data collection Monitoring and Verification	Energy Team and Buildings & Estates	ISO50001:2018 plan to be updated and verify all meters and measuring equipment.	Q2 2021
5	Continue programme of installing water-saving devices in laboratories, kitchens, workshops and WC facilities across the campus e.g. low flow taps, dual flush WC's, time control on urinal flushes and showers and low flow shower heads	Just do it	The plumbing maintenance team carry out regular surveys and inspections of the plumbing network, wash hand basins, sinks etc. Collaboration between the Laboratories to reduce water wastage.	Building and Estates	Monthly surveys and recording of all actions.	Q1 2021

Water Stewardship Action Plan/Targets

Item	Description	Action Type	Impact/ Targets	Who	Next Step	Target Completion
6	Incorporate water usage reduction as a key project design component as part of new buildings and retrofits. Water efficient sanitary fittings; Rainwater harvesting systems and greywater recycling systems; Leak detection; Water sub metering; Presence detectors controlling the water supplies to washrooms; and Water efficient irrigation practices	A3	The Building Research Establishment's Environmental Assessment Method (BREEAM) is a method for assessing how sustainable a new building or refurbishment is. It is University Statement of Fundamentals which will present a significant challenge to design teams.	Capital Works Team and Design Teams	Review of all Capital Projects and inspection of systems.	Q2 2021
7	Increase the awareness of staff, students and visitors of the importance of water as a critical resource that must be used responsibly.	Kaizen Events	NUI Galway Sustainability and Green Campus team run awareness days, it will be a requirement to encourage more awareness of Water usage.	Buildings and Estates, CUSP and Green Campus	Present ideas at Water Forum and set ideas.	Q2 2021
8	Engage staff, students and visitors in responsible water usage and water consumption reduction at a building level and beyond by providing water consumption information and inviting inquiry and feedback.	Kaizen Events	NUI Galway Sustainability and Green Campus team run awareness days, it will be a requirement to encourage more awareness of Water usage.	Buildings and Estates, CUSP and Green Campus	Present ideas at Water Forum and set ideas.	Q2 2021
9	Continue to lead and contribute to research activities in water resource management, water usage reduction, water supply and water treatment.	Kaizen Events	NUI Galway Research to assist in water saving technologies, water transportation, water sewage. SEAI Research award 2020 – Water Drainage	Dept of Engineering and MRI Institute	Learning and presentation to community and online	Q4 2021
10	Use research led teaching and on-campus applied solutions to instil sustainable water practice in our future generations of water professionals.	Kaizen Events	Online learning and Using campus as a live Demo site, this is working well in the Energy Awareness campaigns.	Buildings and Estates Water	Review of method for Live Demo site.	Q2 2021



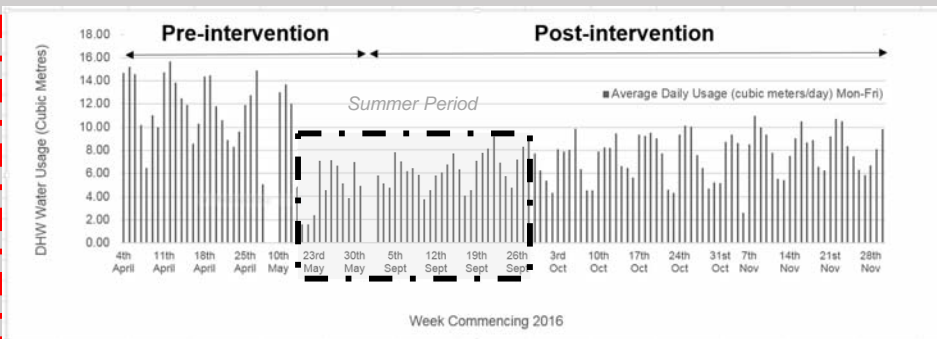
Reduce consumption-RESULTS Engineering Building

Water Consumption Reduction		Pilot Site
		NUIG
Actual Water Saving measured over control period (m ³ p.a.)		5,662
Expected Water Saving (m ³ p.a.)		8,089

Installation of push buttons on showers



User Controlled Usage



Daily Domestic Hot Water Usage Pre and Post Intervention

Day	Ave Daily DHW (April-May) (m ³ /day)	Standard Deviation (m ³ /day)
Mon - Thurs	12.95	1.15
Friday	8.03	3.09
Weekends	9.63	0.80

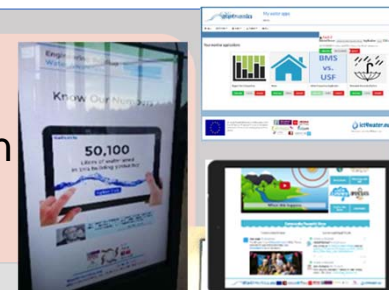
Day	Ave Daily DHW (Sept-Nov) (m ³ /day)	Standard Deviation (m ³ /day)
Mon - Thurs	8.10	0.98
Friday	6.23	0.97
Weekends	5.03	0.74

Measures to meet Objectives



Increase Awareness

- WATERNOMICS Platform Apps
- Public Display Re. Water Consumption
- Interactive Signage at Water Meters



Promote Education

- Water Aware Workshops / Seminars
- WATERNOMICS Seminars
- Promote use of WATERNOMICS Data
- Promote WATERNOMICS Platform for new Apps



Reduce Consumption

Objectives

- Water Consumption Awareness
- Gamification
- Engagement



Improve Operation

- Installation of Metering
- Water Network Information
- Fault Identification Diagnosis

Promote Environmental Responsibility

- Promote use of WATERNOMICS Data
- Promote Waternomics Platform/Apps
- Newsletters / Seminars





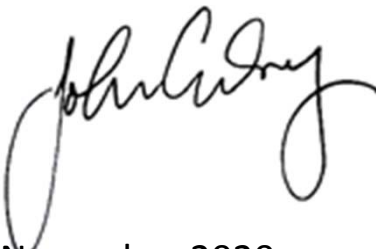
Water Stewardship Charter 2020

Signatures for Water Stewardship Charter 2020

Created by: Michael Curran, Head of Building Services Energy and Utilities

Signature: 

Approved: John Gibney, Director of Buildings & Estates

Signature: 

Date: 23rd November 2020

