Julie's Bicycle
SUSTAINING CREATIVITY

TYNE & WEAR
archives &
museums

CREATIVE
G
GREEN

✳✳✳✳

Discovery Museum
CREATIVE GREEN REPORT
2016/17

Discovery Museum
CREATIVE GREEN KEY RESULTS

Environmental assessment of:

COMMITMENT	33 / 40
UNDERSTANDING	16 / 25
IMPROVEMENT	16 / 35

TOTAL POINTS   65 / 100

✱✱✱✱

33 COMMITMENT to the environment

✔ Policy
✔ Action plan
✔ Procurement policy
✔ Communication and engagement with key stakeholders

✔ Staff roles and responsibilities
✔ Creative programming
✔ Integration with core organisational development

16 UNDERSTANDING of the following environmental impacts
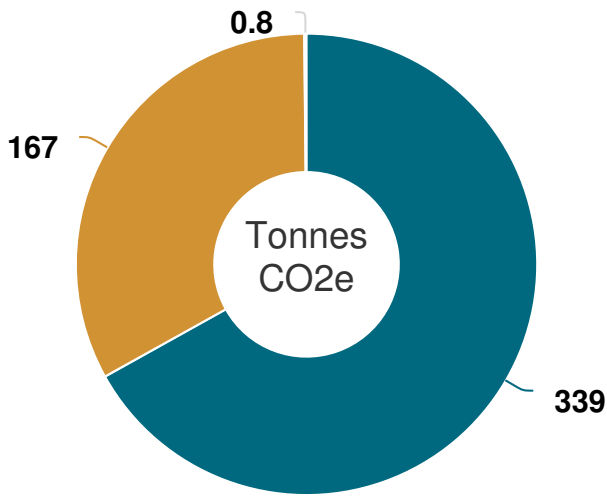
energy   emissions   water   people

16 IMPROVEMENT towards reducing environmental impacts

RELATIVE REDUCTION	ENERGY	EMISSIONS	WATER
Current vs previous year	⬇	⬇	⬇
Current vs baseline year	⬇	⬇	⬇

DISCOVERY MUSEUM	STATISTICS
Type	venue
Floor area	19,447
Tickets sold	315,388
Number of performances	0.0
Number of staff	120

0.8

167

339

Tonnes
CO2e

The total carbon footprint in
2016/2017 was 507 Tonnes CO2e

● Electricity

● Gas

● Water use and waste water

Note: All figures are rounded

Annual Carbon Footprint (Tonnes CO2e)

| | 2011/2012 | 2015/2016 | 2016/2017 |
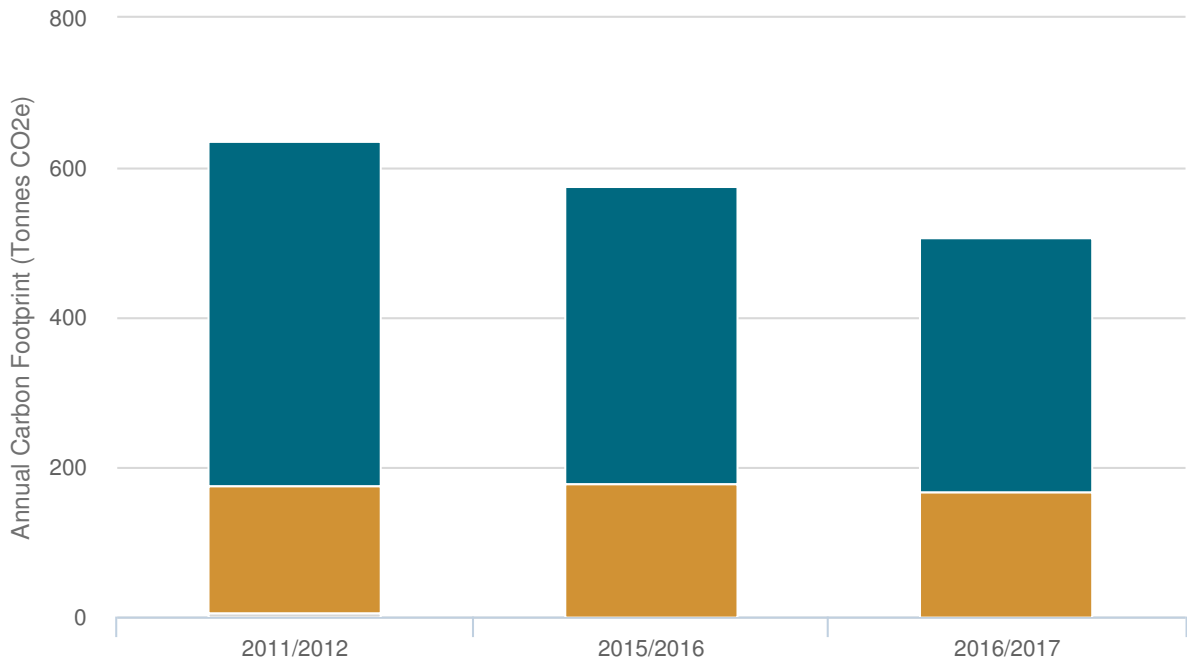
HIGHLIGHTS

COMMITMENT   to the environment

- Environmental policy which includes environmental impacts, objectives, monitoring and employee and stakeholder engagement.
- Environmental Action Plan with a focus on environmental impact monitoring, management and reduction.
- Job roles with formalised environmental responsibilities.
- Committed Environmental and Sustainability Working Group and Green Champions.
- Creative programming with environmental themes e.g. 'Play + Invent'.
- Discovery Museum hosted the Lloyd Newcastle BMW dealership launch for the first fully electric BMW i3 car.
- Staff engagement schemes including Bike2Work scheme, Green Office week and 'Waste Free Lunch'.

UNDERSTANDING   of the following environmental impacts

- Discovery Museum energy audit in 2017 as part of rolling programme of energy audits.
- Monthly energy and water monitoring alongside waste and business travel.
- Monitoring of paper use, printing and publications.
- Demeter water monitor installed at Discovery which manages/maintains water usage by identifying leakages on site.
- Rolling programme of LED lighting installed within venues for example display cases, public galleries and basement stores.
- Benchmarking survey for audience travel.
- TWAM staff environmental attitudes survey.

ABOUT CERTIFICATION

Creative Green is more than a certification scheme - it's an international community of pioneering creative and cultural organisations, recognised for their ambition and action on environmental sustainability. With over 250 certificates awarded since its launch in 2009, Creative Green remains the only environmental certification designed specifically for the creative and cultural sector.

Creative Green offers venues, museums, galleries, festivals and offices a transparent, methodical and inspiring framework for achieving environmental best practice, as well as a forum for recognition and celebration. It supports organisations' environmental impact reductions through its three strands: Commitment, Understanding and Improvement. Points are accrued within each strand and a one to five star certification is awarded based on the total number gained.

The methodology of Creative Green follows best practice and international standards for measurement, reporting and reduction of environmental impacts and it has been designed in partnership with arts, cultural and entertainment organisations.

The continuing emphasis on carbon emissions reductions align the Creative Green community to the ambitions of the Paris Agreement, reached at COP21 in 2015, to keep global temperatures well below 2 degrees of warming.

ASSESSMENT AREAS

COMMITMENT

- Environmental policy and action plan
- Integration of environmental sustainability in broader business mission, strategy or planning

- Environmental responsibilities
- Environmental procurement and sourcing
- Stakeholder communications and engagement

UNDERSTANDING

- Breadth and depth of understanding of environmental impacts
- Extent to which environmental data is used inform action and track progress in reducing impacts

IMPROVEMENT

- Quantifiable reductions in direct environmental impacts, i.e. impacts over which an organisation has direct control such as energy use and waste generation, both total relative impacts
- Actions to address indirect enviromental impacts, i.e. impacts over which an event has limited or no direct control, such as audience travel

ENVIRONMENTAL COMMITMENT

ASSESSMENT AREAS	POINTS AVAILABLE	POINTS AWARDED
Policy, strategy & responsibilities	12	10
Procurement	5	3
Communication and engagement	23	20
Total Points	40	33

HIGHLIGHTS

- Environmental policy which includes environmental impacts, objectives, monitoring and employee and stakeholder engagement.
- Environmental Action Plan with a focus on environmental impact monitoring, management and reduction.
- Job roles with formalised environmental responsibilities.
- Committed Environmental and Sustainability Working Group and Green Champions.
- Creative programming with environmental themes e.g. 'Play + Invent'.
- Discovery Museum hosted the Lloyd Newcastle BMW dealership launch for the first fully electric BMW i3 car.
- Staff engagement schemes including Bike2Work scheme, Green Office week and 'Waste Free Lunch'.

RECOMMENDATIONS

- Define key (quantitative where possible) objectives and targets for all main environmental impacts areas (e.g. carbon, energy, water, waste) and communicate them explicitly in the environmental policy and action plan.
- Align targets disclosed within the environmental policy to the UK government's Climate Change Act and the Paris Agreement.
- Include a context section in the environmental policy describing why climate change matters to Tyne & Wear Archives & Museums.
- Structure the environmental policy to map against the action plan.
- Justify any areas that are excluded from TWAM's action plan over which TWAM has lower influence e.g. energy procurement.
- Explore more options for programming events addressing environmental issues e.g. contributing to Season for Change.
- Engage further with incoming artists by developing artist welcome packs which include a briefing on TWAM's environmental commitments.

ENVIRONMENTAL UNDERSTANDING

ASSESSMENT AREAS	POINTS AVAILABLE	POINTS SCORED
Submission of energy, water, waste, business travel, production	4	2
Attitudinal insights	4	3
In-depth understanding of energy, water and waste	8	7
Monitoring of other impact	3	3
Use of data for setting targets and Key Performance Indicators in policy and action plans	4	0
Evaluation of learning and outcomes	2	1
Total Points	25	16

HIGHLIGHTS

- Discovery Museum energy audit in 2017 as part of rolling programme of energy audits.
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- Rolling programme of LED lighting installed within venues for example display cases, public galleries and basement stores.
- Benchmarking survey for audience travel.
- TWAM staff environmental attitudes survey.

RECOMMENDATIONS

- Develop Key Performance Indicators (KPIs) to measure success and include these targets within your Action Plan.
- Start collating and submitting data on waste and business travel.
- Further develop understanding of the environmental impacts of TWAM exhibitions from design through to curation e.g. materials used, transportation, storage, communications etc.
- Develop a Collections Environmental Management Strategy and Guidance document for collections and loans.
- Ensure staff travel survey results contain distance of travel and mode of transport so this data can be uploaded to the IG tools.
- Audit key suppliers and always request they provide an up to date environmental policy.
- Develop audience travel questions to include reasons behind their mode of choice.

ENVIRONMENTAL IMPROVEMENT

HIGHLIGHTS

Current year: 2016/2017
Baseline: energy use 2011/2012, energy related emissions 2011/2012, water use 2011/2012, waste generation 2011/2012, and business travel 2011/2012

This tables present your percentage change in environmental impacts in absolute and relative terms against the previous and baseline years.

ABSOLUTE	CURRENT VS. BASELINE	CURRENT VS. PREVIOUS	POINTS AVAILABLE	POINTS AWARDED
Energy use	-8 %	-5 %	3	3
Energy use related emissions	-17 %	-12 %	3	3
Water	-58 %	-10 %	2	2
Waste	No data	No data	2	0
Business travel	No data	No data	2	0
Total Points			12	8

RELATIVE	RELATIVE METRIC	CURRENT VS. BASELINE	CURRENT VS. PREVIOUS	POINTS AVAILABLE	POINTS AWARDED
Energy use	per m2	-8 %	-5 %	5	2
Energy use related emissions	per m2	-17 %	-12 %	5	2
Water	per m2	-58 %	-10 %	4	3
Waste	per m2	No data	No data	4	0
Business travel	per Employee	No data	No data	4	0
Total Points				22	7

Achievements

- Absolute energy use has reduced by 8% between 2011 and 2016 and by 5% between 2015 and 2016.

- Furthermore, absolute energy related emissions have reduced by 17% between 2011 and 2016.

- Absolute water also reduced by over a half (58%) between 2011 and 2016 and by 10% between 2015 and 2016.

Next Steps: Energy

- Continue developing energy saving initiatives e.g. rolling LED programme.

- Look at the feasibility of increasing the amount of renewable energy infrastructure onsite.

- Work with catering concessions on energy management and efficiency.

- Continue developing energy management good practice. See ISO500001 for best practice advice.

Next Steps: Water

- Continue developing water saving initiatives e.g. investigate mechanisms to recycle any left over water.

- Work with catering concessions on reducing water use.

Next Steps: Waste

- Submit waste data to the IG Tools to allow Julie's Bicycle to examine Discovery's performance and provide apporpriate recommendations.

Next Steps: Travel

- Integrate a travel survey within the ticket booking process to develop an understanding of audience travel.

- Continue to collect figures for visitor numbers/tickets sold and enter this data into the IG Tools to allow per visitor relative comparisons of your carbon footprint.

ENERGY USE

ENERGY USE	UNIT	BASELINE YEAR 2011/2012	PREVIOUS YEAR 2015/2016	CURRENT YEAR 2016/2017	% CHANGE CURRENT VS PREVIOUS	% CHANGE CURRENT VS BASELINE
Energy use (electricity and gas) -- absolute	kWh	1,853,803	1,754,258	1,661,849	-5 %	-10 %
Electricity	kWh	937,256	794,982	754,842	-5 %	-19 %
Gas (weather normalised)	kWh	916,547	959,276	907,007	-5 %	-1 %
Energy use (electricity and gas) -- relative	kWh per m2	95	90	85	-5 %	-10 %
Electricity	kWh per m2	48	41	39	-5 %	-19 %
Gas (weather normalised)	kWh per m2	47	49	47	-5 %	-1 %
Mains electricity - absolute	kWh	937,256	794,982	754,842	-5 %	-19 %
Green tariff mains electricity	kWh	0.0	0.0	0.0	No data	No data
Mains gas - absolute	kWh	921,455	1,054,774	982,855	-6 %	6 %
Weather gas normalised - absolute	kWh	916,547	959,276	907,007	-5 %	-1 %

Energy consumption (kWh)
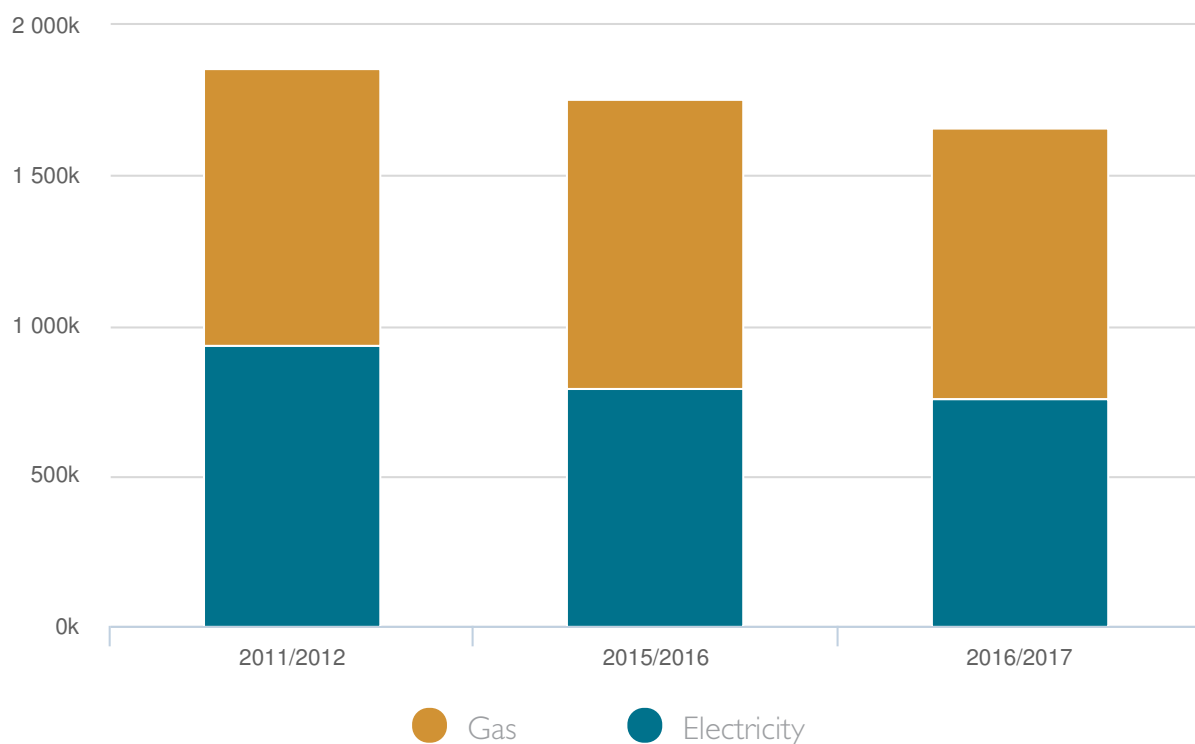
Energy consumption (kWh per m2)
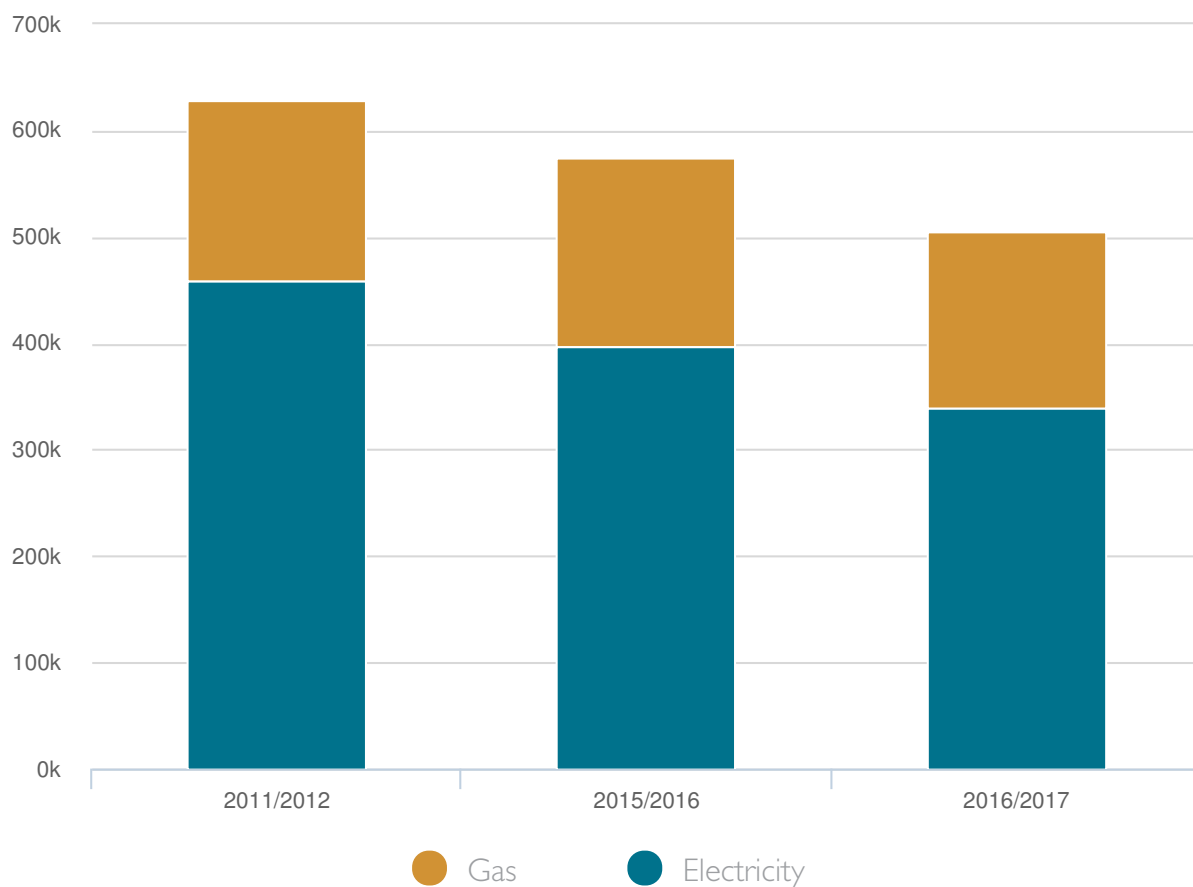

Legend: Gas, Electricity
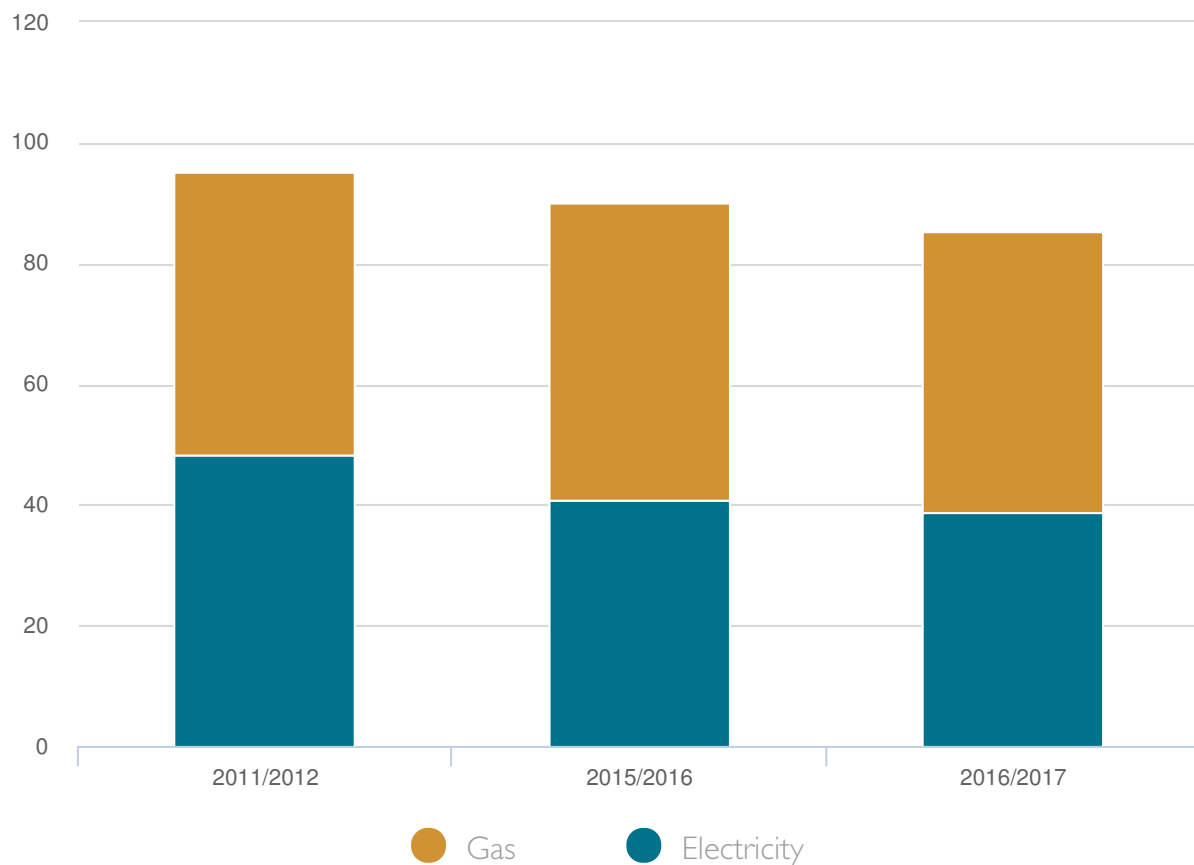
ENERGY USE RELATED EMISSIONS

ENERGY RELATED EMISSIONS	UNIT	BASELINE YEAR 2011/2012	PREVIOUS YEAR 2015/2016	CURRENT YEAR 2016/2017	% CHANGE CURRENT VS PREVIOUS	% CHANGE CURRENT VS BASELINE
Energy use emissions (all sources) - absolute	kg CO2e	630,337	592,322	520,011	-12 %	-17 %
Energy use emissions (all sources) - relative	kg CO2e per m2	32	30	27	-12 %	-17 %
Electricity	kg CO2e	459,893	397,769	339,166	-14 %	-26 %
Green tariff mains electricity	kg CO2e	0.0	0.0	0.0	No data	No data
Normalised gas	kg CO2e	169,536	176,939	166,889	-5 %	-1 %

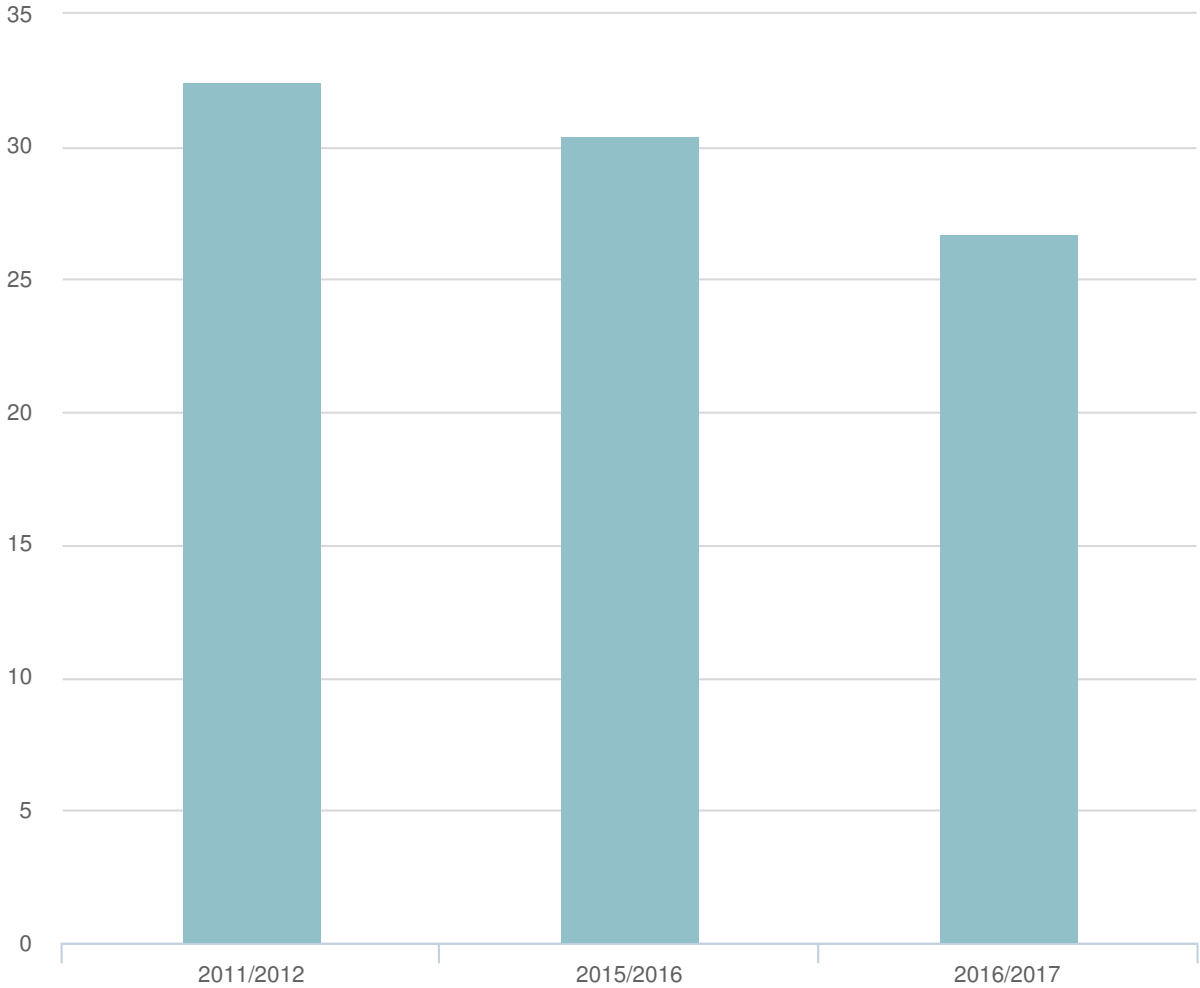## Energy use emissions (kg CO2e)

Legend: Gas (orange), Electricity (teal)

ENERGY USE RELATED EMISSIONS

## Energy use emissions (kg CO2e per m2)

WATER USE

WATER USE	UNIT	BASELINE YEAR 2011/2012	PREVIOUS YEAR 2015/2016	CURRENT YEAR 2016/2017	% CHANGE CURRENT VS PREVIOUS	% CHANGE CURRENT VS BASELINE
Total water use and waste water	m3	5,284	2,486	2,214	-10 %	-58 %
Relative water use and waste water	litres per m2	272	128	114	-10 %	-58 %
Water use	m3	5,284	2,486	2,214	-10 %	-58 %
Waste water	m3	5,284	0.0	0.0	No data	-100 %

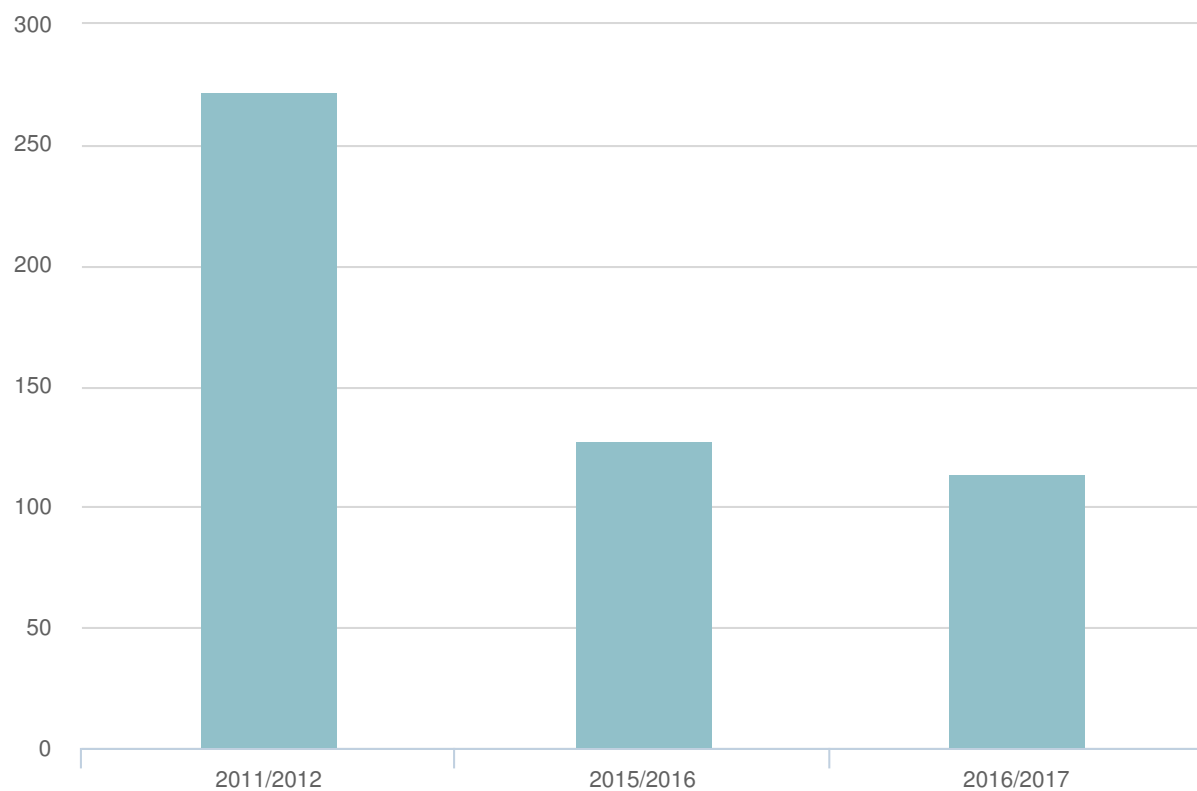## Water use (m3)

Legend: ● Water use   ● Waste water
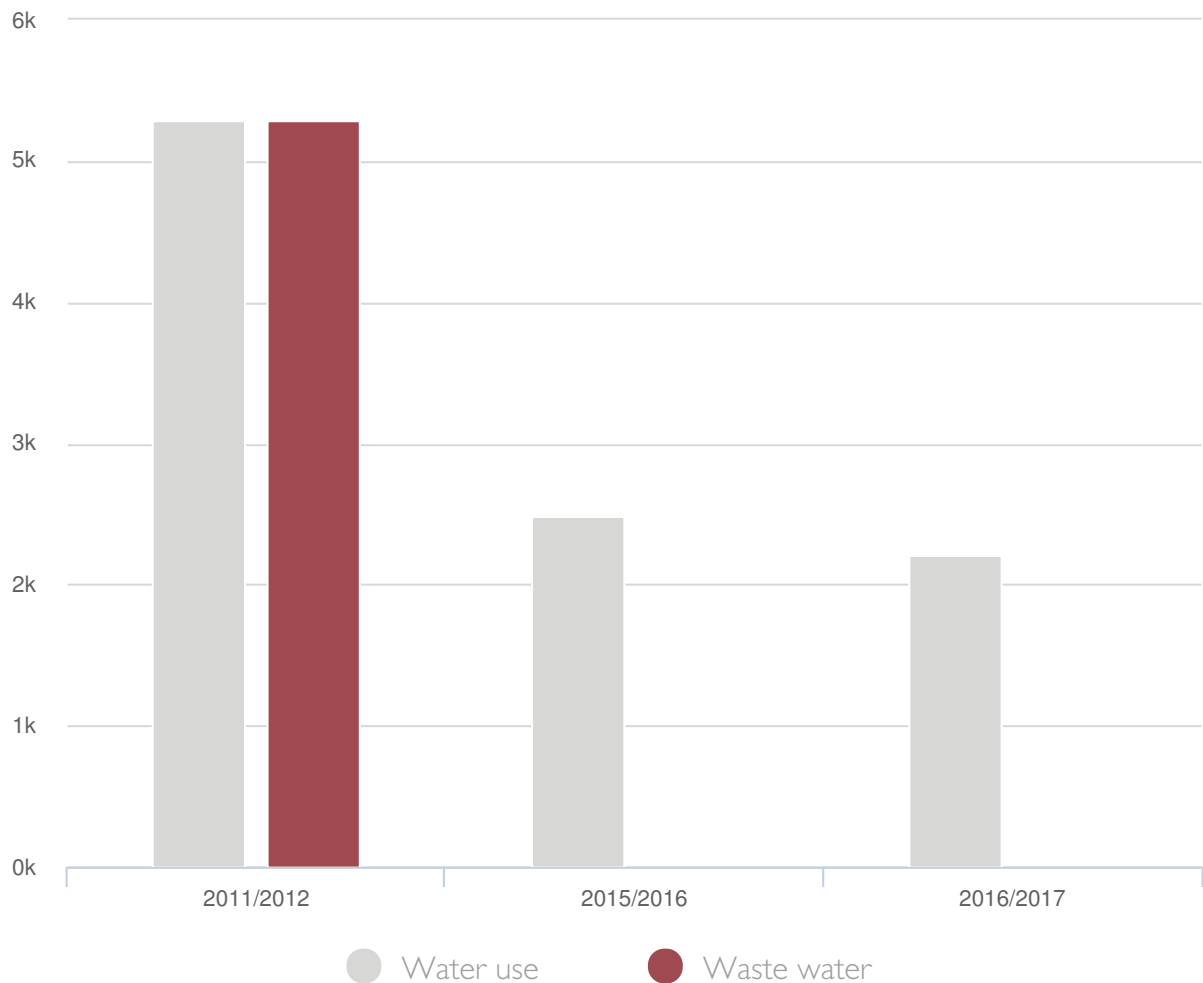
WATER USE

Water use (litres per m2)

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SUSTAINING CREATIVITY

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#creativegreen

Matthew Plummer-Fernandez, Peak Simulator (2015) -
Photo © Chris Foster - Abandon Normal Devices